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# AMERICAN FARMER,

SPIRIT OF THE AGRICULTURAL JOURNALS OF THE DAY.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT  
"AGRICOLAS." Virg.

Vol. I.

BALTIMORE, MARCH, 1846.

No. 9

## WORK FOR MARCH.

In the parlance of pugilists, it is said, that the "first blow is half the battle," and if this old saw holds good in the philosophy of the ring, it may be affirmed with equal truth, that, in all the operations of agriculture, whether in planting or farming, to begin right, at the right time, greatly tend to improve the chances of success, as well as to lessen the labors of the field. It is, therefore, not inopportune in the commencement of spring to remind our brethren, that it is all important they should go to their work with strong arms, willing hearts, and resolute determinations to deserve the smiles of providence. A consciousness that one has done all that in his power lies to ensure prosperous results, even amidst defeat and disappointment, nerves him with that resignation which never fails to win admiration for the present, while it gives him an assurance for a brighter future; for who more than he who meets adverse fate with equanimity, has a right to look prospectively ahead for better fortune? None. If it be asked, how we are to begin right? the answer is at hand. Always be ahead of your work. Never delay that which should be done to-day until to-morrow. Never plough your grounds unless they be in good condition, and be sure never to let an opportunity when they are so to pass unimproved. Get your several crops in at the proper periods. Be sure to have your grounds well ploughed, rolled, and harrowed, until they be reduced to the finest state of tilth of which they may be susceptible. Plow deep. Sow and plant good seed. Keep your hoe and plough-crops clean from the period of their up-coming until they are laid by. Be not ambitious to spread your cultivation over untold acres, but rather let it be your pride to manure well what you cultivate. Make the accumulation of manure the main branch of your system, and when accumulated, protect it from the effects of deterioration from exposure to the sun and rains. Keep on hand at all times an ample supply of the best tools and implements of husbandry, and be sure that they are always in good

order and never exposed to injury from the weather. He that follows these plain common sense rules to the letter and in the spirit will nine times out of ten succeed, unless indeed the elements conspire against him and destroy the best directed exertions. And under this belief we will proceed to point out a few of the many things which should now be looked to

### ON THE FARM.

**Sowing of Grass Seeds.**—As we are among those who deem that no system of husbandry can be perfect that does not keep a due proportion of the farm in grass, we will remind our readers that every field in wheat or rye should be sown with clover, although it may not be intended to let it remain in grass for pasture or for hay. Therefore, though in many regions of our country it may be late to sow clover seed, yet if there be any who may not have gotten in his seed, let him do so forthwith, and if the ground is sufficiently dry to admit of the operation, it would be well to harrow and roll in the seed. Let no one entertain any fears of injuring the crop of wheat or rye, for if the ground be in a sound condition he will do a positive benefit to either crop.

**Clover Fields.**—All fields in Clover should have a bushel of Plaster, per acre, sown thereon as soon as practicable, a moist day to be selected for the operation. By attending to this hint ten times the value of the plaster will be added to the product of hay, while the soil itself will be clothed with an absorbent that will continue through the season to draw from the atmosphere whatever there may be floating in it that is calculated to enrich the soil or furnish pabulum to the plants; for, of a truth, it is thus that plaster acts, or so small a quantity as does, could not produce the astonishing results which are so gratifyingly witnessed by the observing farmer, and which contribute so largely to the sustenance and comfort of his stock, objects which we are sure are dear to the pride and hearts of every good man.

**Old Fields.**—In most of the old States there are numerous old fields which from improvident culture, years gone by, have been exhausted of their fertility, and turned out as to grass, but to the bleaching influence of summer suns. In the approach to many homesteads, these unsightly fields greet the eye but

to sadden reflection and mar those joys which otherwise would await the meeting of friends. Such sights too tend to depreciate the value of farms, be the other portions ever so rich in all that gives fertility to soils and nutriment to growing crops. Now these we do think may be brought back to something like a condition of profitable state of fertility at comparative little expense. Let such fields be fenced in, if they be not so already. Let the cattle be kept off of them; have them well harrowed and cross harrow, then availing yourself of moist weather, spread on each acre a bushel of plaster; let them remain undisturbed until it shall be time to sow buckwheat; when that period arrives plough up your fields, harrow and roll well, then sow a half bushel of buckwheat per acre, harrow it in and roll, and then finish by sowing thereon another bushel of plaster per acre; when the buckwheat first comes into blossom plough it in deeply, attaching a chain to your plough, or precede it with a roller. Then harrow your ground and let it remain a week, when if it be *clayey* ground you should sow it in wheat, harrowing in the seed thoroughly and following the harrow with a roller—if the soil be sandy or light sandy loam, sow in rye, using the harrow and roller as before advised. This done you may wait until your convenience may best suit, when you should sow five or ten bushels of lime and as much ashes on each acre. Thus treated your old fields will yield you a fair crop of grain the first season, and if you treat them the succeeding year in the same way as the former, you may make up your mind that you will have no occasion to turn them out for some years to come, and not then provided you stock them down, as you should your other fields with clover, in the regular course of a wisely contrived rotation of crops. We have recommended buckwheat as the green crop to be turned under as a fertilizer, and we have done so, because it is one of those crops which may be grown with the addition of a little plaster on moist soils, and which, from the constitution of its leaves, draws much of its nourishment from the atmosphere, and will, therefore return to the earth much more than it may have abstracted from it.

**Quantity of Grass Seed per acre.**—Many of the failures which arise from the setting of fields in grass, we are certain, arise from the parsimoniousness which directed the judgment of those who caused them to be thus sown. We have, therefore, ever been the advocate for casting on the earth an ample quantity of seed. Of *Clover* seed when sown alone we never would sow less than 16 lbs. to the acre. If *Clover* seed be sown with *Orchard Grass*, we should sow 12 lbs. of *Clover* and a bushel of orchard grass. Speaking of orchard grass, we will seize the occasion to remark, that wherever the *pasturage* of Cattle or the *soiling* of cattle may be intended we would never sow the clover alone—first, because the admixture of the two grasses together, prevents the cattle from becoming affected with *hoben*, secondly because it makes a better hay, and thirdly, because it makes a much more lasting pasture than does clover alone, and may be said to be a measurably earlier grass, while it grows much later in the fall, and as hay, when mixed with clover, from its greater substance is better for ruminating animals than clover hay alone. Of *Timothy* seed, a peck and a half per acre should be sown. Of *Herd's grass* or *Red Top*, a bushel to the acre is the proper quantity. If *Orchard grass* seed be sown alone, two bushels per acre is about the right quantity. Of *Lucerne*, 20 lbs. per acre is the right quantity. In the selection of *Lucerne* seed, care must be taken

to get it *fresh*, as seed more than a year old is very shy in coming up. *Lucerne* seed by the bye, should always be soaked in warm water for a few hours before being sown, and as taken out of the soak and drained it should be rolled in plaster, or ashes. *Orchard grass* seed should also be sprinkled with water on a barndoor, turned over repeatedly so as to moisten the whole mass, and left a few hours, before it be sown.

**Hauling out Manure.**—As this is a work of much labor and one which requires much time, we would advise all to seize the first occasion to haul it to the field where it may be wanted, and in order to prevent the loss of the fertilizing gases, I would recommend that plaster of paris in the quantity of 1 bushel to every 20 loads of the manure be mixed with it before removal. If the quantity of manure which you may have accumulated through the past season is not sufficient to go over your hoe and plough-crops, go to your woods, scrape up the leaves and wood-mould, mix these with your other manure, and thereby enable yourself to manure every foot of ground that you may intend for corn, as it is useless to worry your hands and beasts with cultivating corn on poor and unmanured lands.

**Oats.**—So soon as the frost is out of it, and the ground which you intend for oats is dry enough to bear ploughing, put all your force to work to break it up—harrow and roll it, then let it remain for a week so as to let the ground settle before you sow your oats, as they thrive best when the soil is compact. Whether you plough or harrow them in, take especial care to see that the roller be freely used, in order that the earth may be thoroughly pressed around the seed, and germination thus ensured. It would be well too, to sow a bushel of plaster and one of ashes, over every acre of them—the first will provide food from the air for the growing plants, while the latter will dissolve the sand and thus form the silicate of potash, which enables the stem to resist the pressure of wind and weather.

We have one other remark to make, and we will have done with oats for the present—every grower of oats should recollect that the earlier they are sown the greater certainty is there that they will head well and yield abundantly.

**Barley.**—This grain, judging from the small quantity, comparatively speaking, grown in our country, and the few number of states wherein it is grown at all, is not, in our opinion sufficiently appreciated. It is on many accounts a much more certain crop than rye, yields on an average fully one-third more bushels per acre, while it always finds a ready market at remunerating prices. Independently of its steady and increasing demand for malting purposes, as horse feed, when chopped, it would be found more nutritious, and, therefore, a better grain to work upon. Its straw is equal if not better to be cut up and mixed for horse feed. The soil best adapted to its growth is a deep mellow loam, tolerably dry, which should be well prepared by deep ploughing, thorough harrowing and rolling.

The quantity of seed per acre is two bushels—the time of sowing, as soon as the ground can be put in good tilth. In view of the uncertainty of the rye crop, and its failure for many years, it has been a matter of surprise to us, that farmers had not long since, to a certain extent, substituted the culture of Barley for that of Rye. We are very certain that, had they consulted their interest, they would have done so. But whether the Barley crop be substituted in toto for that of Rye, we should think that, in

the fact of the necessity for diversifying crops, all would find it to be promotive of their advantage to adopt the former as a part of their system.

**Lime and Liming.**—As the great utility of the use of lime as an improver of the soil, is universally admitted, it should be the duty, as it is the interest, of every one to give his fields a dressing. If he be not able to apply a full dose, let him give a small one; however small the number of bushels he may put upon an acre, it will ultimately tell. If he cannot procure a hundred bushels per acre, let him buy fifty, and if that is beyond his pecuniary means, twenty-five will answer for all present purposes, as we doubt much whether more than three or four bushels are annually extracted by the growing crops. When we speak of lime we use the term in its general sense, which also includes marl.

**Milk Cows.**—As during this and the ensuing month, many of these animals will be bringing forth, they should receive increased attention. In addition to their dry food they should receive daily messes of slops of a nutritious character; they should be warmly housed, well bedded, and cleaned with the card.

**Working Horses.**—These animals should, as they are about to enter upon a period of severe labor, receive additional allowances of grain feed. Their beds should be plentifully supplied, and the curry comb and whip of straw be freely used.

**Stock of all kinds** should receive increased allowances of fodder.

**Sheep.**—As the Ewes will be coming in soon, let them receive daily, in addition to their hay, fodder, or straw, a gill of meal or oats, or the equivalent in roots. They should also be carefully salted at least twice a week—and, at all times, in a tough under cover, there should be a supply of tar and salt, to which they can have access.

**Early Potatoes.**—In years gone by, St. Patrick's day, the 17th of this month, was the usual time at which early potatoes were put in the ground; but as the seasons have, like men, undergone a vast change in this country, that period may possibly be too early, yet, although it may be too soon for planting, it is not for preparing the ground, therefore, the sooner the better the ground be broken up, as an additional ploughing to all root crops operates advantageously. In selecting the seed for planting, none but sound roots should be taken. The sets should be cut at least a week before being planted, and as cut should be dried in lime, and if the theory which we publish in this month's number be correct, it would be well, as a preventive against the rot, to soak the potatoes before cutting them, in a solution of salt and blue vitriol—for the proportions see the Report under the proper head. In addition to the soaking, and drying in lime, we would recommend, when the potatoes first come up, that a mixture of one part salt and two parts lime be sprinkled over each row, so that, should the ground be infested with the mushrooms described, they may also receive their quietus. If the disease be caused by fungus, we can see no reason why the soaking and drying in lime should not prove equally efficacious in preventing the recurrence of the disease, as it is in relieving the wheat crop from the smut.

**Tobacco Beds.**—These sure foundations of the planter's income must be well attended to.

**Orchards.**—Let the trees in the Orchard be carefully examined for dead limbs. These should be carefully cut off into the sound wood; the wound smoothly faced with a drawing knife—this done let a plaster of the following mixture be applied over

the wound—Take equal parts of fresh cow dung, clay and slacked lime, to be mixed together into the consistence of mortar: face the plaster with a covering of thick paper to turn rain. The dead limbs being cut off and the wounds dressed, take a hard brush,—the clasp of a scrubbing brush will do,—and rub down the entire body of the tree, then with a paint or white-wash brush, apply the following mixture to the body of each tree as far as you can reach, extending down to the roots. Mix together 5 gallons of soft soap, 1 lb. of sulphur, and a gallon of salt. When perfectly incorporated together, it will be fit to be applied.

If the Orchard has not been recently manured and in culture, a gentle dressing of compost made of 5 parts forest-mould, 2 parts rotten dung, and 1 part lime, would greatly improve the quality of the fruit, by being ploughed in shallow—or if it should not be convenient to plough it in, harrowing will answer; but whether the plough or harrow be used, care must be taken not to injure the roots of the trees.

**Fences.**—Examine every fence on your place, and repair every panel which may require it.

**Poultry Houses.**—Subject your hen and other poultry houses to a thorough cleansing, taking care that the nests be whitewashed inside and out, as also the entire house of each kind. Make fresh nests with clean straw and sprinkle lime or ashes in them.

**Earns, out Houses, and Fences around the House.**—Let each and all of these be thoroughly repaired and receive a coat of good white-wash.

**Subsoil Ploughing.**—Have you a five acre lot near the house that you intend for corn this season? Yes. Then I am glad to hear it. Why so? Because I wish you to give subsoil ploughing a fair trial. Subsoil the one half of it, and plough the other half in the ordinary way, manure each part alike, plant the whole in corn, and cultivate each part alike, and we will bet you a moss rose, that the part subsoiled will yield one-third more corn than the other. We feel particularly anxious that several gentlemen in each neighborhood, should try the experiment, in order that the virtues of subsoiling should be put to the severest test, and its utility or inutility be placed beyond all cavil and all doubt.

## LIME AND ITS ACTION AND USES.

As the season is opening when farmers and planters will be directing their attention to the subject, we will make a few remarks upon Lime, and endeavor to point out—as it has been our pleasing duty often before—some of the many offices which it performs in the improvement of soils and crops. But while we confess ourself the ardent advocate of the use of lime as an agent in the melioration of arable lands, we would impress this truth upon our readers—that he who relies solely upon lime to effect every thing in making his lands more and permanently productive, will necessarily find himself disappointed. Lime can do much, but it cannot do all things. Lime is an essential ingredient or element of all soils—fertility, in a measure, depends upon its presence, but there are other constituent elements which are equally essential to the growth, maturation and fructification of plants and grain, and when any of these are absent, sterility in a greater or lesser degree must necessarily ensue.

All lands which have been under tillage for a num-

ber of years, without receiving periodical doses of manure, become less and less productive, their soluble fertilizing matters having been extracted by the crops which may have been grown thereon, and removed therefrom, without having an equivalent returned. On such lands the office of lime is to *restore* the capacity for production for a *limited time*—but without additions of other substances convertible into the food of plants, its beneficial effects must necessarily be arrested in the course of time—and that time not involving a cycle of many years. Why *Lime* should exert a beneficial influence for a time upon lands *apparently* worn out, is, according to our humble opinion, very easily explained upon philosophical principles. *Lime* and *potash* must be present in all soils to secure fertility—these substances only exist to a limited extent, even in the best soils, and are continually being carried off by the growing crops. So continuous is this source of exhaustion, that a quarter of a century is sufficient to deprive fertile virgin soils of the supply which they received from nature, and hence it is, that the richest lands, if untended to, become deprived of two of the most essential ingredients of production. *Lime*, in one of its offices has the power, by its stimulating effects, to convert *insoluble* into *soluble* matters, or in other words, to *dissolve* the hard, fibrous inert vegetable matters, which are present in most exhausted soils,—and it is to this power, possessed by lime, that we are to attribute any temporary improvement which we may find produced on worn out soils after the application of lime. We say that in all worn out soils such substances do exist, and it must be evident that it is so, or the improvements so manifest, for a time, after a dose of lime, would not be, as however necessary that mineral may be as a constituent element, it is unphilosophic to ascribe to it all the powers of fertility—it can and does dissolve inert bodies, the which, without its chemical agency, would remain undissolved, and therefore inoperative; but it *cannot supply* them—it can *prepare* the food of plants from such substances as we have described—it forms of itself, in its carbonate form, one of the substances taken up by most plants—but those substances, which we have spoken of, must be supplied, as *Lime* cannot of itself generate them.

*Lime*, by its chemical action then, upon those inert vegetable bodies which may be lying dormant in the earth, produces by the processes of combustion and decomposition—slow to be sure, but certain—a proportion of *potash*, as well as nutritive matter, and in this way acts in a two-fold capacity, for while it furnishes to the plant positive *nutriment*, it provides the soil with an agent to *dissolve* the *sand*, thereby forming the substance known to chemists, as the *silicate of potash*, or in other words, that substance which forms the outer coat or crust of corn, grain and grasses, and which enables each and all to stand erect.

The observation of every farmer will have taught him, if he has used *Lime*, that its action the first year

is not as striking as in subsequent years, and the reason is as obvious as the fact is true—and the more especially is this result applicable to worn-out lands; nor is the cause of this deferred benefit to be wondered at, as in lands of the better description the bodies found therein are from their nature difficult to be acted upon, and therefore require more time to convert them into the food of plants than were the vegetable matters in a soil of more recent date, and therefore more easily dissolved. Here then, the every day observation of the *practical agriculturist* sustains the value and truth of the theory of the *agricultural chemist*, and proves how necessary it is for practice and theory to unite in those great objects which all good men should have in view—the improvement of the intellect of those who have to cultivate the soil, as well as the improvement of the soil itself, as the latter has its strongest guaranty whenever the former is most judiciously promoted.

In Pennsylvania, we learn from that accomplished scholar and distinguished farmer, Dr. Darlington, the opinion is obtaining strength, that lime is most beneficially applied to the surface of grass lands a year or two before being broken up—that, when thus applied, its good effects are more visible on the first crop—and in this fact we entrench ourselves in the tangibility of the opinion we have before advanced, as it is evident to our mind, that, from the moment the lime is applied to the surface of such grass lands, its agency in preparing the *food of plants* commences, and by going on continuously until the following takes place, the *Lime* in the interim has accumulated a sufficient stock of nutriment and potash to push forward and sustain the first crop, and as its action is kept up, each succeeding one derives its peculiar aliment, until, by the exhaustion of the supply of lime, a renewed dose of that mineral becomes necessary.

From the facts and reasoning in the case we draw this deduction—that wherever lime may be applied to poor lands in which there may not be much vegetable remains, and those of an insoluble character, that the better policy would be to previously turn in a green crop of some kind, in order that the lime may have a body to act upon which is easily decomposed, and which can therefore be promptly converted into aliment for the first crop.

Where lime may be applied as a top-dressing upon old fields intended for culture or for pasture, or upon grass lands, we should invariably, after the spreading of the lime, sow either a bushel of plaster, or twenty of charcoal, per acre, with a view of husbanding the volatile gases for the purposes of agriculture, as however slow the action of the lime might be upon the decaying vegetable matter, a very sensible quantity of such gases would be generated, eliminated, and otherwise lost.

System and perseverance in agricultural pursuits, never fail to reward the husbandman for his labors, his anxiety and his capital invested.



## APPLICATION OF LIME TO LIME-STONE LAND, &amp;c.

To the Editor of the American Farmer :

Suspecting that the chief cause of our limestone lands not producing as much wheat per acre as in former times, was the extraction of the lime from the surface soil, by excessive cropping,—I made the enquiry, through you, about a year ago, whether it had been the practice any where to apply lime to limestone lands, and the effect of the application. I was very satisfactorily answered by Dr. Darlington, of Pennsylvania, that, in Chester county, the heaviest doses of lime were applied to limestone land, and with the finest effect.

A recent analysis has shown, that the surface soil of our limestone lands, is nearly destitute of lime. I am satisfied also, that they are greatly deficient in *alkalies*:—both essential to the production of good wheat. The crops prove it. For eight or ten years preceding the last, the average of wheat per acre has not exceeded twelve or fifteen bushels, and this upon lands capable of yielding twenty-five, or more. Lime, we know how to make and apply: and we know, that a sufficient quantity of *ashes* would supply the requisite *alkalies*. But the difficulty with such of us as are disposed to improve our lands, and increase our crops, remote as we are from cities, is, to obtain that sufficient quantity. We can obtain no *ashes* but what we make upon our own farms. Our best farmers have no other sources of fertilization, than the few *ashes* they make, their stables and barn-yards, plaster and clover. Dr. Muse, in his very interesting address, published in your last number, alludes to this subject. "*Ashes are indispensable*," he says, "where wheat is in frequent cultivation:" "it requires a large supply of the *alkalies*:" "*ashes contain them*." Wheat is our staple; and our necessities have obliged us to bring it too frequently into cultivation. As a sufficient quantity of *ashes* is out of the question with us for our large fields, it would be a great benefit to us, if we could be informed, through your publication, by what else that we have or can produce within ourselves, or by what rotation of crops, we can supply and keep up the requisite quantity of *alkalies*, so as to make our lands produce good and abundant crops of wheat.

While seeking this information, allow me to touch the subject of *rotation*,—closely connected with it, and one exceedingly interesting as a mere matter of science and skill, but of vast importance in its consequences,—ultimate ruin or prosperity, in my view, being involved in it. Hence the wisdom of adopting an *abiding* as well as a *profitable* course of crops.

A farm, (which has been tenanted for years, badly tilled, and exhausted, according to my notion of what a farm ought to be, but which last season, yielded in the only field in cultivation, between fourteen and fifteen bushels of wheat to the acre,—where wheat grew the year before, and corn the year before that,—nothing applied to any of the crops,) has been divided into eight fields, of equal size, and the rotation adopted is,

1. Corn.—To which all the coarse manure made, is to be applied.

2. Oats.—Or fallow, if the ground be not strong enough, or if not manure enough to dress them; and if fallowed, buckwheat, or some other green crop, to be turned under, and limed.

3. Wheat.

4. Clover.—Cut for hay; the second growth turned under; limed as soon as the wheat is off; and plastered the spring previous to cutting.

5. Wheat.

6. Clover.—Cut, turned under, and limed and plastered as before.

7. Wheat.—8. Rye.

Then Corn, Oats, Wheat, Clover, &c. again.—Each of the other seven fields will receive the same course of cropping; and they are so arranged that there will be one field in corn, one in oats, another in rye, three in wheat, and two in clover, in every year.

A compost of wood mould, or swamp muck, saturated with the urine from the stables and cattle sheds, to be applied to the wheat when put in, or as a top dressing in the spring.

In each year, one field will be manured, three top dressed, and two limed and clover turned under; and, of course, every field will, at the end of the eight years, have received one manuring, three top dressings, two limings, and two second crops of clover turned in.

The corn field sub-ploughed, and a system of thorough tillage, and drainage in some spots requiring it.

Pasturage forms no part of the arrangement with the eight fields; that, and soiling, &c. provided for in other distinct fields and lots about the farm buildings.

With such a rotation, so conducted, what is the chance for the future? *Ashes*, you will perceive, enter not into the calculation; since we are not able to procure more than sufficient for our corn hills; and yet they, or some substitute, are essential to our wheat. Is there any thing, and if any thing, what, in the above rotation, which will supply and keep up a sufficient quantity of the *alkalies* referred to in Dr. Muse's address? The rotation has been adopted, with a view to the restoration and gradual improvement of the farm, as well as to secure a due proportion in wheat each year, (almost our only *sale* crop,) and in the hope of making and keeping a soil, (its quality indicated by the yield of last year,) an abundantly prolific one for that grain. What will be the chemical and other effect of the operations and applications, as a whole, at the end of the eight years, and of each? Is it an exhausting or improving rotation in the long run? Where is the defect, in the course, or in the applications? Wherein can it be improved, and what, within our resources, remote as we are, can we add to the applications?

This communication, already too long, as one of enquiry merely, might have been extended, by adding my own explanations and reasons for adopting, in our peculiar locality, this rotation. But to the agricultural chemist they will be sufficiently indicated by the course itself. There may, however, be mistake; and as this subject of the rotation of crops, is attracting great and increased attention, and the interests of many may be permanently affected for 'weal or for woe,' by the system they may adopt, you will confer an incalculable benefit, if you, or some of your scientific and practical contributors, would turn your minds to the subject, and, dropping technical terms, give the 'why and the wherefore,' and all the results of your reflections and experience.

February 20th, 1846.

VIRGINIA.

ANSWER TO VIRGINIA—SOURCES AND USES OF ALKALIES—SUBSTITUTE FOR ASHES—ACTION AND USES OF CHARCOAL.

The communication of our correspondent "Virginia," will attract attention. Its style, as well as the subject upon which the author treats will ensure it that distinction. The rotation which he has laid

down we believe to be well calculated to effect the object he has in view—the improvement of the farm he describes—and we have no doubt, that, by pursuing the plan he has marked out, he will, in a very few years, restore to his land, in a measurable degree, the *alkalies* of which it has been deprived by injurious cropping while tenanted out, as every crop of Clover turned under will, by the process of decomposition to which it will be subjected by the action of the lime, generate more or less of those essential elements in every good soil. Among the beneficial offices of lime, as we have shewn in another article, is that of promoting the rotting of all vegetable bodies, whether of recent or remote deposit in the earth. Ashes, as our correspondent knows, is produced by the burning of wood, and *lime* produces in the earth a *combustion*—slow to be sure—but still such a combustion as, in its chemical effects, among other things, produces *potash*, and hence it is that lime, clover, and plaster, act so as to keep up the supply of potash in tobacco culture. Before the introduction of these agents in that culture, new grounds had to be cleared, or *short* and *inferior* crops endured. Tobacco, as has been proven by analysis, takes up a large portion of potash from the earth, possibly a larger portion than almost any other vegetable product, and as that *alkali* is alike essential to its growth and elaboration, it must be present in the soil, either by natural or artificial means, or the plant cannot successfully be grown. Practice, the best of all teachers, has long since demonstrated, that the application of lime and plaster, and the turning in of clover crops, has the effect of restoring to the soil the capacity of successfully rearing this plant, and we believe there can be no doubt that the process by which this renewed ability is restored, is by the creation of a new supply of potash for the plant to feed upon. The burning of tobacco plant beds, is of immemorial date—all acknowledge the indispensableness of the practice—but few perhaps, believe as we do, that the greatest good thereby produced arises from the ashes deposited on the soil by the operation. There are to be sure, four ways in which benefit may result from the burning of tobacco beds: 1—in the destruction of the eggs and the young of insects: 2—in the destruction of the seeds of weeds: 3—in the product of charcoal, and 4—in the product of ashes or potash. The utility of the two first benefits, every lover of cleanly farming and planting will cheerfully admit—the offices performed by the charcoal are, in our opinion, these. Charcoal is known to be an indestructible substance, and, therefore, cannot be presumed to yield any sustenance to plants, of itself, and yet, it has been proven by numerous experiments, that plants have been grown in pure pulverized charcoal,—or that which was presumed to be as nearly so as possible. It does, to be sure, contain a few salts, amongst these may be named the *silicate of potash*, but they are in such minute traces as to be of but little service in pushing forward the growth of plants. Then

it may be asked, if charcoal is, of itself, indestructible, and contains but very minute traces of substances which enter into plants, how can it operate to sustain vitality in plants? To this we answer, that though its properties, except as a disinfectant, be negative, yet when we consider its agency as an absorbent and condenser, we must yield to it qualities which, to all intents and purposes, must be looked upon as of an affirmative character, or at all events, to exert an influence upon vegetation equally salutary as though they were ever so affirmative. Charcoal will absorb and condense within its body ninety times its own weight. In periods of rain, it becomes charged with rain water to that extent, and as rain-water is known to possess a due proportion of ammonia and other volatile salts, these are received also into the charcoal, where they are kept, as in a store house, to be yielded up as they may be required by the wants of the plants. In periods of drought it absorbs the volatile gases from the air. As we desire to be understood, we will explain what we mean by ammonia in connection with manure—it is that substance which we smell in the stable, and around the dung-heap, while in the process of being rotted, the which, though we cannot see it, except in its vaporous exhalations, forms the *fat*, the *nutriment*, upon which plants do feed: and if charcoal can attract, condense, and retain these bodies—of which there is no doubt—as the atmosphere is ever charged with them in a greater or less degree, the inference is irresistible, that it must prove one of the most valuable auxiliaries known to agriculture. Of the agency of ashes, we propose to have a few words. All ashes contain more or less *potash*, according to the wood from which it may be made. All plants require to sustain them in an erect posture, what is termed by chemists, the *silicate of potash*, or in other words, a compound paste, as it were, formed of *silex* (sand) and *potash*. This substance is formed in this way, the potash dissolves the sand; this being done, a new compound body is formed out of the two, and while in a liquid state, is taken up by the roots of the plants into their bodies, and when there, by the order of nature, is so disposed of, and distributed, as to form their outer crusts, thus imparting to them that elastic power which enables them to withstand the storm—and, in a word, to stand erect, bear and mature their fruit.

Our correspondent asks us to name a substitute for ashes, and we have already pointed to Lime as that substitute, and we will here remark, that every blade of grass and of straw, every corn-stalk, which he carries from his stables and cow yards, contains more or less potash, the which, so soon as decomposition takes place, will be disengaged and placed before his growing crops in a form that they can avail themselves of—he has also a fruitful source of supply in the clover-leys which he contemplates turning under, while the Lime that he means to apply will greatly accelerate the period at which these sources of en-

richment may be rendered available in the growing crops. His "swamp muck and wood-mould" will bring with them no inconsiderable portion of the material from which potash may be manipulated; but still the question may be asked—does not the crops which may be raised upon, sold and consumed away from the farm, reduce the supply of potash originally in, or artificially placed in the soil? The answer to this question must be given affirmatively; but the prudent husbandman can supply the deficiency in part, by the means we have pointed out, and wholly by the purchase of two hundred pounds of *potash*, say once in seven years, for every acre of his cultivable land. The cost would be less per acre than would be that of a hundred bushels of ashes per acre, the usual quantity applied, while the labor and cost of hauling and spreading would be greatly less than of ashes.

Our correspondent has not told us what the peculiar texture of his soil is; but from the fact of its bearing wheat, we presume that it possesses a due proportion of *clay* in its constituent elements. If we be right in that conjecture, he might, by ploughing an inch or two deeper, be enabled to turn up virgin clay, which, in most cases, has very sensible traces of *potash* in its composition, and thus might he add a serviceable portion of this alkali to his fields without going abroad for it. Its good effects might not be visible the first year, but would repay well after the sub-soil had been submitted to the meliorating influence of a summer's sun and winter's frosts.

We have thus given our views upon the several questions propounded by "Virginia," and while we hope that some of our able contributors may give theirs, we trust that he, himself, will favor us with his "own explanations and reasons for adopting in his peculiar locality," the "*rotation*" which he has, as we doubt not from the admirable system he has adopted, that if the lights by which he were guided were made known, that many would be induced to follow his example.

#### SUMMER MANAGEMENT OF SHEEP.

(Continued from the Feb. No.)

We continue our abstract from Morrell's excellent work.

##### SHEARING.

The pound in which the sheep are confined must be well littered with clean straw, pains having been taken previously to have the house in which the operation is to be performed thoroughly brushed out and cleaned. Thus prepared, the *shearer*, after catching the sheep, must throw the right arm around the body, grasping the brisket with his hand, then lift it, and with his left hand remove all dirt and straw which may be adhering to the feet. If the sheep is filthy about the tail, or any burs attached to the wool, these must be cut off at the threshold of the door. Then the sheep must be placed on that part of the floor assigned to him, resting on its rump, and himself in a

posture, with one knee on a cushion, the back of the animal resting against his left thigh. The shearer then grasps the shears about half-way from the point to the bow, resting his thumb along the blade, which affords him better command of the points. He should then commence cutting the wool at the brisket, and, proceeding downwards, all upon the sides of the belly to the extremity of the ribs, the external sides of both thighs to the edges of the flanks; then back to the brisket, and thence upwards, shearing the wool from the breast, front, and both sides of the neck—but not yet the back of it—and also the poll or fore part, and top of the head. Now the jacket of the sheep is opened, and its position and that of the shearer is changed, by being turned flat upon its side, one knee of the shearer resting on the cushion, and his other pressing *gently* the fore-quarter of the animal to prevent any struggling. The shearer then resumes cutting upon the flank and rump, and thence onwards to the head. Thus one side is completed. The sheep is then turned on the other side, in doing which great care is requisite to prevent the fleece from being torn; the shearer then acts as he did on the other side, which finishes the shearing. He must then take his sheep near to the door through which it is to pass out, and neatly trim the legs, and leave not a solitary lock any where as a harbor for ticks. It is absolutely necessary for him to remove from his stand to trim, otherwise the useless stuff from the legs becomes intermingled with the fleece wool.

In the use of the shears, let the blades be laid as flat to the skin as possible—do not lower the points too much, nor cut more than from one to two inches at a clip, frequently not so much, depending on the part, and compactness of the wool.

##### INTERIM BETWEEN WASHING AND SHEARING.

If the weather after washing be cold and cloudy, the shearing must not take place until it becomes settled and mild, as it is necessary that the *yolk* appear before the latter operation. If the weather be mild, in from a week to ten days, shearing may be performed. It should be recollected, that the *yolk* is necessary to be present to confer softness and brilliancy to the wool, and that shearing should be done in warm weather. If a cold rain or storm should occur during the operation, the shearing should be suspended, and those sheep which may have been shorn should be put under cover without delay; neglect of this precaution may prove fatal.

##### SORTING OF SHEEP.

The period immediately after shearing is recommended as the one to be seized upon to select such sheep as may be intended to sell to the victuallers, as the quality and quantity of the fleece and form of carcass is then best determined. The fleeces of the most approved should be weighed, every particular noted, and a classification of the sheep be made. The wethers and dry ewes selected for sale should be turned out to good keep—nor should the same attention be spared towards all others of the flock.

**MARKING.**

Before being turned out after being sheared, the initials of the owner's name should be painted upon the body of the sheep with lampblack and linseed oil, or as a substitute for the latter, hogs' lard—the lampblack being first killed with a small quantity of spirits of turpentine.

**ROLLING THE FLEECES.**

After the shearer has done shearing, the fleeces must be carefully taken from the floor and put upon the rolling table, outside uppermost. The valuable loose locks must be all picked up—the useless stuff from the legs put by itself for manure.

The roller then proceeds to spread out the fleece, which cannot be too carefully done: he must separate the ragged portions from the skirts and head, then make it as compact as possible by pushing from all sides to the centre. The loose wool is then to be thrown upon the fleece, which is followed by turning over the sides and ends so as to form an oblong strip, say about two or three feet long and one and a half wide, which is moved to the front edge of the table: he then commences to roll the long side of the stripe, aided by a boy at the other end of it, who lay their arms flat from the elbow to press the wool as the rolling proceeds, till the stripe is reduced to six or nine inches in width, depending on the size of the fleece. The boy then mounts upon the table, and each commences rolling from the ends of the stripe till the parts meet, when the boy rolls his portion on top of his assistant's, firmly pressing it till the twine is passed round both ways and tied.

**ARRANGEMENT OF WOOL FOR SALE.**

Four or five tiers of fleeces should be placed upon top of each other, as nearly alike as to size as possible; the next pile one tier of fleeces up, and so on diminishing the succeeding piles one tier, till the last is reduced to a single one. In this way, the fleeces represent piazza steps, or more properly the ascending steps of an amphitheatre. This arrangement saves the buyer much trouble.

The flock-master must honestly tag his sheep, cleanse their fleeces, and put nothing within them but the "clean thing." The practice of enclosing clippings in the fleeces should be abated, nor should the fleece be tied with an unnecessary quantity of twine, no more should be used than may be required to confine it.

**SHEARING HOUSE AND APPENDAGES.**

Every flock-master should provide himself with a shearing house and pounds—the expense is trifling and convenience great. The shearing house will answer for a receptacle for the farm tools and implements when the shearing is over. The wool loft should be well lighted.

**BALEING WOOL.**

*Burlaps* is the proper material for making the bales, the widest kind the best. Three yards make a bale. In packing the wool a hoop is used at the mouth of the bale, which is to be elevated off the floor.

**REMEDY FOR THE SHEEP TICK.**

For 100 lambs use a decoction made of 5 lbs. of plug, or 10 lbs. of stem tobacco, which is to be boiled so as to make thirty gallons. Put this decoction into a half hogshead—upon one side of which fasten a rack to rest the lambs after immersion, in order that the liquor may drain from them. The lambs must be held by the head and dipped to the ears. Care must be taken that none of the decoction passes into the eyes or mouth.

**MAGGOT FLY.**

To ward off the attack of the Fly, a mixture of tar and turpentine may be applied about the ears, horns, and tail—or a mixture of butter and flour of sulphur, will answer.

**NOXIOUS WEEDS.**

The flock-master must eradicate all noxious weeds from his sheep walk, as the low laurel, St. Johnswort, bur dock, thistle and tory plant.

(To be Continued.)

**CALIFORNIA TOBACCO.**

Monrovia, Md., Feb. 10th, 1846.

Messrs. Sinclair, Jr. & Co.

DEAR SIRS—I wish to introduce to your notice, a very fine and peculiar kind of Tobacco. I obtained from the Patent Office through the kindness of a friend of mine, a member of Congress, a very small quantity of seed, which I sowed, and from it I have raised a peck of seed, which I wish to dispose of.—This Tobacco was procured from California, and is spoken of as a very remarkable large growth; altho' the last summer was uncommonly dry, this Tobacco grew a fine size; it is quick in its growth, and comes to perfection early, carries well, leaf large, texture silky, colour fine, bright red or cinnamon. I would recommend its culture in preference to any kind I know of at this time, as a profitable business. It strikes me if this Tobacco was well known that it would be highly valued; it has the best leaf that I ever saw for wrapping; if you think it would be desirable to have some of the seed, so as to give an opportunity to the planters throughout the State to procure some of the seed through your agency, please inform me, and the profits shall be divided between us, or you can have the seed by purchase, at your option. As the time for sowing approaches rapidly the seed ought to be forwarded to you immediately; you can make a trial, and if you cannot succeed we must only put up with the disappointment. Call the attention of the public to it, and I think success will attend the effort. Please direct where and how the seed should be sent—an early attention to this matter by way of an answer, would be desirable.

Very respectfully, WILLIAM HOES.

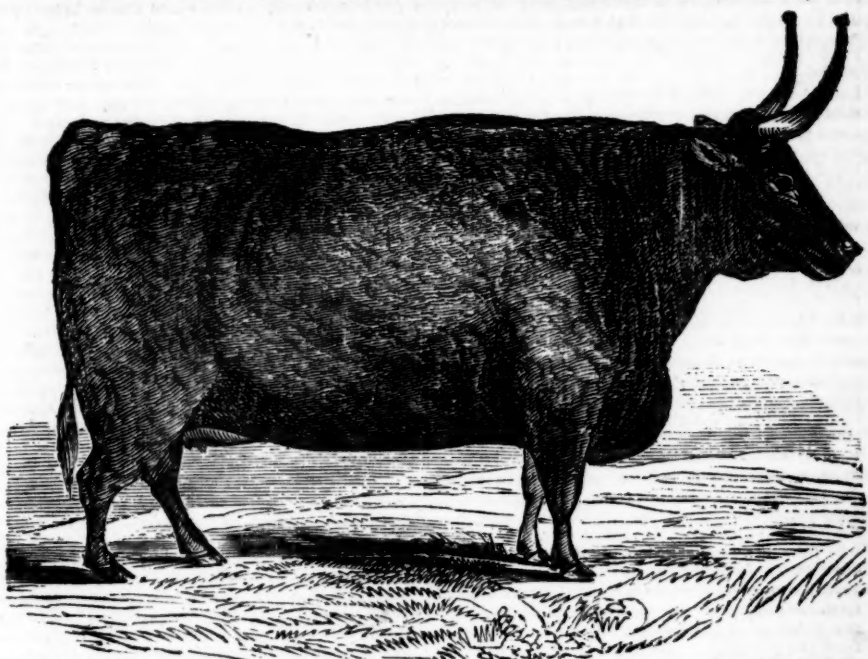
P. S.—The leaves of this Tobacco grows thick upon the stalk, which is a very great consideration as to weight. W. H.

—The California Tobacco Seed alluded to by Mr. Hobbs, is received by Messrs. Sinclair & Co., and for sale at their Seed Store, No. 62 Light-st.

An educated and industrious yeomanry, is to a nation what virtue is to a woman—the priceless gem which confers value.



## PORTRAIT OF THE EARL OF LEICESTER'S NORTH DEVON COW,



Which obtained the Prize at the late Fair of the Royal Agricultural Society of England—engraved from the Portrait in the "*London Illustrated News*," received at the office of the American Farmer.

## FATTENING CATTLE.

The following discussion, which occurred in the *Loughborough Agricultural Association, England*, is upon a subject of vital interest to every agriculturist, and the manner in which it is treated will not be its least recommendation, as each speaker displayed an intimate acquaintance with the topic discussed, and proved what we do not always meet with, that he really had something to say worth hearing:

## LOUGHBOROUGH AGRICULTURAL ASSOCIATION.

The quarterly meeting of this Association was held in the Wellington room, at the Plow Inn, on Thursday, the 25th September. S. B. Wilde, Esq. presided; and Mr. J. N. H. Burrows occupied the vice-chair. After the cloth had been drawn, and the usual loyal toasts were given, as also the health of the President, Chas. Wm. Packe, Esq. M. P.—

The chairman read the circular calling the meeting, in which it was announced that the subject of discussion was, "the fattening of cattle."

Mr. Rawson, surgeon, of Kegworth, introduced the subject. He said, there were known to chemists about fifty-six elements, of which there were only eight or nine in animals; the principal of those were oxygen, hydrogen, nitrogen, and carbon. Oxygen enters into all animal and vegetable substances, and is an essential ingredient in atmospheric air. Nitrogen has no positive properties; its object is to dilute

oxygen. No animal could live in nitrogen alone. Hydrogen is sixteen times lighter than common air, and is an essential ingredient in water, and very inflammable. After an elaborate description of the various elements which enter into the animal frame, the speaker proceeded to inform the meeting what were the various uses of each. Nitrogen, he said, was the principal ingredient in flesh and muscle. Fat is composed of carbon and hydrogen. If they wished to make an animal fat for sale, or for show, they must feed it on carbonaceous food. Unripe straw is very carbonaceous. As the seed ripens it becomes less so, and not so suitable for fattening. Cows generally feed well on aftermath. Half a pound of Swede turnips contains 110 grains of nutriment, while the same weight of white turnips only contains 85 grains. The outer temperature is very important; it should be brought as nearly as possible to the temperature of the blood. The same regard to temperature is necessary with respect to a milking cow. Fat is a mere deposit, a secretion; it does not impart strength, rather the contrary. Hence we do not make a horse fat for racing, but make him display muscular power. In fattening horses for sale, carbonaceous food, young grass, oil-cake, Swede turnips, &c. should be given. If feeding for use, the carbonaceous should be mixed with an equal quantity of other kind of food.

The CHAIRMAN next proposed "The health of Mr. Bernays," which was received with applause.

Mr. A. J. BERNAYS (analytical chemist, from Derby,) then rose and said: Agriculture is a subject of such vital importance to the community at large, that I consider myself bound to attend all such meetings, where I may increase my knowledge of it; and I shall always be glad to be present at your quarterly meetings as long as I am in the neighborhood of Loughborough. We have just now heard that although 56 elements are at present known, yet only a small portion of them enter into the composition of animal and vegetable life. Of this portion, consisting of from 10 to 12, only four enter extensively into the formation of the organized portion of the vegetable and the animal. These elements arrange themselves into two distinct classes: the one class, formed by the combination of carbon, hydrogen and oxygen, in different properties, includes what Liebig calls *the elements of respiration*. Hereto belong starch, fat, butter, sugar, gum, and alcoholic fluids. These may likewise be termed non-nitrogenized substances. The other class, formed by the combination of all the four elements, includes the *elements of nutrition*, or the *nitrogenized constituents* of food. Hereto belong vegetable and animal fibrine, caseine, albumen, and gluten. The non-nitrogenized constituents were provided for sustaining the animal heat of the body, and protecting its parts; and in so doing a provision is laid by, upon which Nature draws when the body is diseased. From their very nature they are easily destroyed by the influence of the oxygen of the air. You all know it to be a common practice to milk cows in the field, if they be at any distance from the homestead; the reason is obvious: when a cow walks a great distance without food, the oxygen of the air almost immediately begins to act upon those substances with which it can most easily combine. Such a substance is the butter in the milk: when a cow is driven home, the butter is found, in great part, to have disappeared. Again, after parturition, the milk of the cow contains only traces of butter; because, by the increased action of the muscles, a larger proportion of oxygen is taken into the system. This well known fact brings us to the subject of stall-feeding. When a cow is intended for milking, and with a view of yielding as much butter as possible, we naturally confine her. In this unnatural state, there being no call for exercise, the food taken by the animal is only in small part expended in maintaining its heat. However, we all know that confined milch cows never yield so well-flavored butter or cheese as those which are unconfined. Cows living in a natural state eat what they like; stall-fed cows eat what they get. *Owing to this cause, the Dutch cheeses have nearly been driven out of our market by the American.* In Holland, stall-feeding is the common practice; hence is the produce less palatable than the American, in which country, land being cheaper, the practice is unnecessary. There can be no question about the utility of stall-feeding. But I very much question whether close confinement is equally beneficial with a confinement allowing of some gentle exercise. When the weather is warm, cattle may pasture in the meadows without loss to the agriculturist. *The air is then nearer the temperature of their own bodies, besides being more expanded.* The animals feel no call for exertion to keep themselves warm, and the gentle motion necessary in the seeking of food, by increasing the healthy state of the body, enables them not only to eat more, but to assimilate better what they do eat. In winter the case is materially altered. The temperature is far lower than that of their own

bodies; the air, too, being more condensed, contains a proportionally larger quantity of oxygen. Therefore, more non-nitrogenized food will be required to combine with the excess of oxygen; indeed, as we all well know, more food will be required than in warm weather. Here the peculiar advantages of stall-feeding come to our aid. *You will perceive that warmth produces a saving in food; it is indeed an equivalent for food.* Every thing that cools the body of an animal, causes a proportionate *expenditure of food*. In stall-feeding, the temperature of the air of the stalls should be equally maintained, and they should be kept clean. The animals should be regularly fed, have plentiful litter, and be kept clean. If, as we have already said, warmth is an equivalent for food, it is obvious that the form in which food is given cannot be immaterial. The more we facilitate the adaptation of the food for the organs of digestion, the greater will be the saving to us. The farmer cuts up his hay, straw and turnips to save some expenditure of force, hence of food, by the feeding animal. If the food contain much water of a temperature far lower than that of the animal, it must be raised to that temperature at the expense of a part of the food. This is obviated by the process of steaming. An ox, fed by Earl Spencer, consumed in a winter month (the temperature of the air 32°), 60 lbs. of mangel-wurzel a day. Now, in order to raise the temperature of the body of the ox, no less than one-twentieth of the food was expended. All feeders of pigs know that they thrive better on dry than on wet fodder. (Mr. B. sat down amidst great applause).

The CHAIRMAN then proposed "the healths of Mr. Stokes and of Mr. Allen," who made a few observations on the advantages of giving artificial food to animals in the straw yard. He had himself given oil-cake to cattle, and found it to remunerate him.

C. STOKES, Esq. rose to give his testimony to the principles laid down by Mr. Rawson and Mr. Bernays. He could fully bear out Mr. B's remarks on stall-feeding.

Mr. SMITH wanted to see science brought forward in connexion with Agriculture. "We want," he said, "something definite and distinct on the formation of fat and muscle." He wanted defined what would produce most fat, milk, and cheese; and he hoped to provoke one of the gentlemen present to rise and define it. He hoped they would give them the kind and quantity of food to produce them.

Mr. C. W. WOOD, surgeon, of Woodhouse Eaves, said he would direct the few remarks he had to make exclusively to the expressed object of the meeting, namely, the feeding of cattle; and he viewed that as the most important matter with which the practical farmer had to do; in short, his whole life and exertions tended only to produce the greatest possible quantity of beef and mutton—if not in the shape of fat cattle, his supply of grain only produced the same effects in man. But before we talk of producing, it is necessary to ascertain correctly what it is we want to produce. All animals are composed of bone, muscle, fat, cellular tissue, wool, hair, horns, skin, and nails, and we find these very substances ready formed in vegetables, the power of nutrition in the animal having nothing to do but select them from its food, and by means of the circulation to place them where they are wanted. If your object be, as in the young growing animal, to increase as well as to sustain it, you choose those vegetables which contain a large proportion of muscular fibre, or nitrogen and phosphate of lime for the bones such as peas, beans, oats, barley, &c. If, with a full

grown animal, your object be to sustain its condition with an increase of fat, you give those vegetables which contain fat ready formed, as lentils, Indian corn, oil-cake, &c. But as you have generally a mixed object in view, namely, to produce bone, muscle, and fat also, you must necessarily give a mixed food—the operations of which I will now explain. The composition of the animal and the vegetable world is identically the same, and the latter, wherever we find it, contains in a greater or less degree all the elements of the former. The vegetable world is sustained entirely from inorganic nature, the earth on which we tread, and the atmosphere we breathe, occupying a middle sphere, its whole existence being to collect materials to build up the animal, consequently entirely subservient to it. The inorganic world, again, is composed of a few simple elements, of which hydrogen, oxygen, nitrogen, carbon, phosphorus, sulphur, and some saline substances, as potassium, sodium and calcine, form the chief, the very elements of vegetable and animal life. Geology, chemistry, physiology, are therefore essential to the right understanding of this subject, bearing ever in mind that the lower are always administering to the wants and necessities of the higher orders of creation. There is no motion in an animal body, or emotion of mind, but what causes a corresponding absorption of the tissues of the body, and in order to keep up this daily waste, a certain amount of food is necessary. This is called sustaining the body. Thus cattle working hard require a larger amount of food than when at rest. This necessity being duly attended to, constitutes health. But fattening, gentlemen, is an unnatural condition, and requires an increase of substance. Hence the necessity of an unnatural means, as the absence of exercise, light, and the influences of the atmosphere, a mixed diet (to bring out all the materials of the animal body to the greatest perfection) in a dry, warm state. *Mr. Childer's beautiful experiments proved that warmth alone with an animal would produce one third more flesh, and at the expense of one-fourth less food. Mr. Norton also proved that the absence of light with warmth produced still greater results.* The reason of this is obvious. Every animal possesses both nutritive and respiratory apparatus; the one to sustain the body, the other to support its vitality, by producing heat or warmth. This first object is effected by the gluten in the food principally, the basis of which is nitrogen. The second by the starch, sugar, and gum, contained in the food, which form bile, the basis of which is carbon. The bile passes into the intestines, where it meets with oxygen, and thus becomes carbonic acid. In this state it enters the circulation, where it meets with peroxide of iron (which the blood always contains), the carbon unites with the iron, and forms carbonate of iron. In this state it passes to the lungs, where it meets with fresh oxygen during inspiration, which re-converts the carbon in the carbonic acid, which passes off during expiration, while the peroxide of iron is re-formed, and taken back by means of its carriers to be again transformed into carbonate. The result of this combustion of carbon is heat. The heat of the animal body is nearly 100 degrees: all food, therefore, before it can be assimilated must be raised to its own temperature, which can only be done by the consumption of carbon, or in other words, food. Potatoes, linseed-cake and oleaginous seeds, on account of the starch, sugar, oil, and gum they contain, are well adapted to accomplish this end. If we recollect for one moment on the immense importance of the liver and

lungs in the animal economy, is it not strange to see the score of diseased ones which our shambles are constantly exhibiting? showing the great inattention the farmer pays to the comfort and well-being of his cattle. Fat is a reservoir of carbon for the system to draw upon for the purposes of combustion, in the event of the food not containing a sufficient quantity of the proper elements to keep up animal heat. As manure is an important result attending the feeding of animals, it may be well to remark that its quantity depends upon the refuse of food, and the amount of absorption going on in an animal's body, or in other words upon its own destruction, thus returning to inorganic nature, as food for vegetable life, the elements of its own nature. But the quality depends upon the quantity of nutritious food given to the animal. The young, growing animal requiring increase as well as sustenance, consumes all the nitrogen and fatty matter in its food. The milking cow the same. But in the full-grown, feeding animal a large quantity of these ingredients is not consumed; a rich and valuable manure is the result. In choosing animals for feeding purposes, the farmer often exhibits a remarkable knowledge of physiognomy. He likes a kindly-disposed, quiet-looking animal, with symmetry of carcass; one built for strength, broad across the back and loins, and long quarters, where large masses of muscles are placed, a narrow and deep chest, and a "good handler," or where there is a large quantity of fine, soft hair, with plenty of fatty matter underneath to nourish it. Thus furnished, he has only to put into operation the suggestions of science, and the result must necessarily be both profitable and useful. When we see the extensive application of capital, industry and science to the manufactures of this country, and the comfort and wealth they produce to thousands of our fellow-creatures, also the dominant influence of its interests, threatening the downfall of the British farmer, surely it is time, and our bounden duty, to unite these same principles, that the abundance of the soil may satisfy both landlord and tenant, and be the means, under the blessing of Divine Providence, of producing plenty of cheap food to the many thousands of our wailing fellow-creatures.

The CHAIRMAN proposed the health of Messrs. Smith and Wood.

Mr. SMITH replied, and expressed his gratitude to Mr. Wood for his elaborate exposition of the subject, and still hoped to see science and practice combined much more than he had done.

Mr. WOOD proposed the health of the Chairman, which was received with loud cheers.

The CHAIRMAN rose and expressed his gratitude for the kindly manner in which they had drank his health. He would have gone farther into the subject before them had it not been so ably treated by gentlemen of practical science. It was from practical men they must expect useful information; and when they had practical men for their leaders, it was their own fault if they did not benefit by them. He bore testimony to some of the principles laid down by the previous speakers, and said he should feel pleasure in presiding at their meetings. Again thanking them for the honor they had done him, he resumed his seat amidst applause.

Mr. BERNATS again rose, and said—In order to obtain a fair proportion of fat and lean, it is of the utmost importance that you should be acquainted with the composition of food. We should be very much mistaken were we to judge of the value of food by its bulk. Green-top turnips, mangel-wurzel, and

red beet, contain 89 per cent. of water; Swedes, 85 per cent.; potatoes, 72 per cent.; oats and wheat straw, 18 per cent.; hay, peas, and lentils, 16 per cent.; and beans only 14 per cent. Hence the latter food is infinitely superior, as to its feeding properties, to the former. But we have only spoken of the food in relation to water: it is necessary that we should understand each other when we make use of certain terms. It is but too indefinite if we include fleshening and fattening in the term *fattening*: the term *rearing* would then be more appropriate. But it would be still better if we distinguish between *fleshening*, or the formation of the muscle, and *fattening*, or the formation of fat. According to the quantity of non-nitrogenized constituents of food capable of forming fat, in other words, according to the supposed fattening properties of food, they rank thus:—1. Oats, Barley meal, and hay; 2. Beans and peas; 3. Lentils; 4. Potatoes; 5. Turnips and red beet. According to their fleshening properties, they stand thus:—1. Lentils; 2. Beans; 3. Peas; 4. Flesh; 5. Barley meal; 6. Oats; 7. Hay; 8. Carrots and potatoes; 9. Red beet; 10. Turnips; 100 lbs. of lentils are supposed to be capable of yielding 33 times as much muscle as 100 lbs. of turnips. Great advantage therefore, results from the admixture of food. An animal which has been fed chiefly on oil-cake, would, on being turned out, increase in size much more slowly than the animal which has been fed on hay, or on turnips and hay. The oil-cake produces chiefly fat, and little flesh; hence the movement of the animal will consume much of the ready formed fat, or tallow. It is only when the oil-cake is given with fleshening food—such as beans, oats, and hay—that lean is proportionally formed. Warmth, confinement, and fattening food are most favorable for the formation of butter, fat, and tallow. Herbage—which is generally denominated *poor*, but which, in reality, is rich in nitrogenized constituents, and which cows have to crop themselves—is favorable to the formation of cheese, but not of butter.

Mr. STOKES—Would you recommend the food to be given in a warm state?

Mr. BERNAYS—Decidedly; a little lower than the temperature of their own bodies.

Mr. STOKES proposed "The health of Mr. Burrows, and the Stewards."

Mr. B. returned thanks, and said he had been much pleased with the discussion that afternoon. He was sorry that more practical men had not risen to take part in it. He had found by experience that cattle kept dry and warm consumed less, and fattened better.

Mr. HEXSON rose and asked what mixture of food Mr. Bernays would recommend. He was at a loss to know how to put these different elements together. He hoped to hear at some future discussion how to produce the largest amount of fat, without losing sight of the manure heap. He proposed the health of "Rev. E. Wilson;" who rose and returned thanks, and expressed his gratification with the discussion. He always found instruction at their meetings.

Mr. STOKES suggested that tables of the quantity and quality of food recommended, should be drawn out and some of the members requested to keep an ox or two, and give the result of their experiments for the benefit of others.

Mr. HENSON made another observation or two relative to the quantities of food and the manure heap, and

Mr. BERNAYS rose and said—I can only say, in answer to Mr. Henson, that I shall be happy to an-

swer his questions as to the necessary quantities of food for producing flesh and fat, on some future occasion.

Mr. EATON said they had much science and a little practice. He would propose "The health of Mr. Walker," who would be able to give them a good deal of practical information (cheers).

Mr. WALKER said he hoped to have taken his own pleasure on that occasion. He was almost afraid to venture an observation where there had been so much science. He felt inclined to walk away and largely benefit. As a practical man, he intended to make use of what part would suit him. The manure heap had been referred to, and he would observe, it was very well to have the whistle if they did not pay too dear for it. He would not recommend giving oil-cake to store cattle. They ought to be exceedingly careful how they gave oil-cake in the straw yard. Vegetables were the proper food for animals. He gave two pounds of oil-cake a day, and hay, to some cattle, and they did not do well; they were feverish; there was no swelling of the muscle, no lifting of the lean meat. He gave them turnips, and there was immediately an improvement.

Mr. SMITH made a few observations on the importance of attention to the temperature of the atmosphere to which cattle were exposed; and

On motion of Mr. Henson, seconded by Mr. Stokes, it was resolved—"That this meeting entirely agrees with the science of nutrition now propounded, and recommends the practical farmer to test his theory by his experience."

Thanks were voted to the Chairman, and appropriately acknowledged; and the meeting, which occupied upwards of four hours, separated.

#### A BRITISH STOCK FARM.

To the Editor of the *American Farmer*.

SIR:—Observing letters published in the Cultivator, on the rotation and culture of crops, in Midlothian, Scotland, as there are several other systems of farming, some of which are much more important, at least requiring a far greater amount of capital and skill, necessary to carry them on, if it should be of any interest to you, or your readers, I would briefly describe the general management of a stock and tillage farm combined, on the borders of England and Scotland, celebrated alike for its tillage, culture, and in the breeding and fattening of stock; and sir, were it possible, I should like to take you a leisure trip along the magnificent banks of Tweed, and skirting Flodden Field, rendered memorable in Scottish history, and by Sir Walter Scott; at no great distance from which, can be found the farm that I select for my purpose. It is one of the finest in regard to quality of soil; although not half the extent of some, it contains one thousand and fifty acres, six hundred in tillage, fenced off in fields of thirty acres each; five of thirty, and one of twenty acres, in old grass pasture, the old fashioned ridges something in form of an S; the most aged resident, nearly one hundred years, can give no account when it has been ploughed; two hundred and eighty acres in one enclosure, a pasture for the Ewes, which has never been ploughed at all, is the arrangement of the lands.—The owner, or rather occupier,—for it is only held by lease for twenty-one years, at an annual rental of two thousand pounds sterling, and although title free, the public burdens amount to two hundred more,—is a man of wealth and skill, with a vast deal of practical experience, for all those requisites are necessary to enable him to carry on the concern to advantage—



his force consists of a steward, who receives his orders every evening for the operations of the following day, two shepherds to attend the stock, who also receive their instructions when the occasion demands—thirty-five men, women and boys beside, who are engaged for twelve months at a time, are the laborers permanently on the farm; his stock consists of eighteen work Horses, and in the stable appropriated to his own use, may be seen a hackney, and a couple of splendid hunters, for what Briton is not fond of hunting, particularly if in the neighborhood of such crack parks as those of the Duke of Buccleugh, Lord Elchos, and some others? Hogs form but a small item in his calculation: and he keeps no more than consume the refuse suitable for such animals, that may be made on the farm; two hundred and forty cattle of different ages, with eighteen milch cows, all of the Durham breed, and the sheep, of the full Leicester, number nineteen hundred, on the twelfth of May, and on that day it is time to stock the pastures; sixty 3 years old cattle, steers and heifers, which have had half turnips during winter, with a plentiful supply of straw and water, are now taken from the yards, and put on three of the best old pastures; into another, thirty cows, the property of the servants and the owner, are turned; the fifth reserved for Hay, which is the only one that is ever cut, and that every third year; on the small one of twenty acres, are to be seen sixty calves, some of them yet getting milk, which is given to them night and morning, by a couple of rosy cheeked, rustic maids—one hundred and twenty 1 and 2 years old, but for which there is no grass on the farm, a couple of fields of middling quality are rented. This completes the summer arrangement for the cattle, and we now turn our attention to the sheep. I may here state the different appellations given them when of different ages:—Lambs are distinguished by the term of Ewe and Wether, according to sex—when weaned, they are called Hogs—when once shorn, Dinmonts and Gimmers—on the highland Farms where they are kept until three and four years old Wethers; and the females, from Gimmers, when they have had their first Lamb, take the title of Ewes. Two hundred wether Hogs, which have had fall turnips through winter, with a few oats in spring, were put on sixty acres of the young grass about the first of April; the balance of five hundred ewes and wethers are divided over one hundred and twenty acres of the second year's grass—and the Ewes with their Lambs grazing on the hill for the present, form the order of the sheep. And we shall now take a peep at what progress has been made for the turnip crop.—The tillage land is six hundred acres, managed on the five shift system; it has been thorough drained at an expense varying from three to six pounds per acre.—Lime at the rate of 150 to 250 bushels, and an annual purchase of two hundred quarters of Bone dust has put it into the finest possible condition—the fallow break, of course, is one hundred and twenty acres; it has all been twice ploughed since the previous crop of Oats were removed from the ground, and that selected for ruta baga, probably four times, harrowed fifteen or sixteen times, not forgetting once or twice with Kirkwood's patent harrow besides, and every vestige of weed, if there are any, carefully removed by hand, with bands of women and boys. A large pile of manure, which has been carted out during winter, lays at the end of the field, and when all is ready, the operation of sowing is commenced by two or three ploughs, making fourteen or sixteen furrows on one side of the pile, three or four carts, with three men to load, a boy to drive each, and a

man to deposit the manure in the drill in small heaps about twelve feet apart; five or six women spread it carefully out, a part of the business of the utmost importance, for if the turnips are not of a size pretty much alike, the crop can never be a full one—the plough is now passed down between the first and second furrow, lapping one-half of it on the manure, thus forming the drill, and in coming up again making a fresh furrow; the operation is thus continued until the field is finished. As close to the plough as possible, a man with a turnip machine sowing two drills at a time follows; the quantity of seed is from three to four pounds of Swedish; the other varieties from one and a half to two pounds per acre. By the twenty-fourth of the month the Swedish turnips ought to be in the ground; by this time the wether Hogs that were put on the young grass in April, are now ready for market; after being washed they are again sent to their pasture for a week, to allow the wool to dry, and the grease to return upon it; they are then shorn, and immediately sent off to market and sold. From the manner in which they have been fed, the calculation is, they ought to weigh twenty pounds per quarter nett, and the fleece upwards of six.

Two fields are now empty, one of which is sufficient for the horses, and to the other, are brought fifty or sixty of the Ewes that have twin Lambs, which makes so much more additional food on their pasture for winter.

June 1st, is the season for sowing purple topped imperial Border Muler, Aberdeen yellow, and other varieties of a hardy nature. From the tenth to the twenty-fourth is the best time for white globe, and other kinds of common turnips—ten to twelve cart loads of manure, with eight to twelve bushels of bone dust per acre, is one of the safest methods of securing a full crop. About the beginning of the month, some of the earliest sown will be ready to be thinned out. A small plough for the purpose, and also a scarifier is passed between the drills, as close to the turnips as possible, followed by women and boys with hoes, who leave the plants nine or ten inches apart. Some farmers advocate a wider, others a less space, but their opinions are generally founded on the quality and condition of the land they occupy; between two and three weeks from being thinned, the plough and scarifier are again passed through, followed by the hoe, and the operation once more repeated is work generally sufficient for the crop. In the early part of the month, the shearing of the whole flock is begun; the Hogs are first washed; in a week after, the Ewes get their share of the washing process, and when the whole is completed, the clip generally averages six pounds each. Immediately after, the wool staplers from Yorkshire are in the country, riding from one farm to another, inspecting the different parcels, and in a short time all is purchased.

July.—This is a busy month—the working of the turnip crop, (for after they are of a suitable size to be thinned out, to allow them to remain many days is a very serious injury,) together with the clover hay, keeps all hands, young and old, in full employment.

There are two methods adopted in curing hay, one is, to let it remain in swarth until it will keep in cocks of about two hundred pounds; the other is more expensive. It is put into small cocks every evening, and again laid out the following day, sweated so much that a stranger to the system would pronounce it spoiled; it is afterwards put into what are called pikes, remains so for a month, and then collected into one stack, the larger the better, as when cut up, the hay is of much finer quality and sweeter;—near the

end of the month the Lambs are weaned, grass is generally rented for a month; (it can always be obtained at from three to fourpence sterling per week,) —and the Ewes and Wethers carefully separated.

*August*—is ushered in by some of the early oats and wheat, changing from green to the golden hues of autumn; the old land hay is also ready for the scythe, the curing of which, is a much more tedious process than the other, particularly if the crop is a heavy one; as soon as cut, it is spread out with pitchforks, allowed to lay three or four hours, turned again, and so on until it will keep in cock; afterwards piked, and remain so, until fit for the stack.

The middle of the month, harvest generally commences—extra hands in any number can be hired; multitudes from the Emerald Isle come over for the purpose of collecting a few pounds to pay the rents of their small patches of land at home, the Connaught Boys distinguishable by their coarse grey habiliments; others from the North, the garments of which might vie with Joseph's; probably the comparison can be carried no further; but with the peculiar characteristic of the Irish, they appear to be perfectly happy.

*September*—The Lambs, Ewe and Wether, are now brought home, and put on the after-math of the hay fields, on which there is an ample supply of food, until it is time to put them on turnips; this is the season for bathing them; the liquid is composed of water, tobacco liquor, soft soap, spirits of turpentine, and a little corrosive sublimate; it destroys the vermin, and keeps the skin free from those diseases to which sheep are liable.

This is considered the principal harvest month; some of the first cut, will now be fit for the stack-yard; not an hour is lost when the grain is dry enough—when a Scotch mist comes, and we have got in plenty, all hands are employed, some in thatching the stacks that may have been got in, others making ropes of straw, and the balance in preparing the straw. At the latter end of the month, the sixty cattle that were put on the best pasture on the twelfth of May, are now a-fat as wished; and as the markets of this country bear no comparison to those of Great Britain, for the facility in disposing of agricultural produce, I will describe that of Morpeth, a small borough, the property of the Earl of Carlisle. It is held every Wednesday; the average show is four thousand sheep, and one thousand cattle, all fat; they are purchased by butchers from Newcastle and Shields, from the mining districts on the Tyne, the Tees, the Wear, and by jobbers from the manufacturing district of Yorkshire. Sixty cattle, the Ewes that may have missed Lambs, are, or ought to be fat, with a few of the Dimonts, perhaps in all may make a hundred, are arranged on Saturday previous, and despatched on Sunday under the care of one of the Shepherds, with the assistance of another man, for if they can travel more than seven miles per day, they are not much suited to the palates of Colliers and Cotton-spinners; on Tuesday evening buyers and sellers are in the town. When markets are brisk, many of the bargains are negotiated; on Wednesday morning by three o'clock, the waiter has your candle lighted, and before being well down stairs, you are encountered by some of the butchers and jobbers, who probably purchase the whole; the sheep are afterwards disposed of,—by eight the market is over, the accounts are settled at ten; and if the cattle average twenty-five pounds, and sheep two pounds five shillings each, there is every reason to be satisfied with prices. At this time what are called the draught Ewes, are selected; one-third of the number are sold annually, their place

being supplied by the like number of Gimmers; they are purchased by jobbers who take them South, principally to Yorkshire, and there disposed of to the small farmers, who in their turn, sell both Ewe and Lamb, fat in May or June following. As the stubbles are cleared, the Ewes are brought from their own pasture and put on them for two or three weeks, which is a great benefit to their pasture for winter food.

*October*.—A minute examination of the turnip, and a careful calculation as to the relative proportion between the crop, and the quantity of stock, is made and acted upon accordingly; practice enables him to make a very close estimate; if they are not sufficient, the necessary quantity is purchased on some of the tillage farms, and either cattle or sheep sent to consume them, as the case may be.

Two hundred, the best of the Wether Hogs, are now selected, and what of the Dimonts that remain, and also the Gimmers that are not intended for Ewes, are put on full turnips; the Ewe Hogs, and the balance of the Wethers, are given turnips three or four hours per day, and then turned off to their pasture again; this is the time also to put the Rams among the Ewes; the time is regulated by what period it may be wished to have the Lambs in spring. On the low situations, March, on the higher lands, April is soon enough; in a well managed stock great care is taken in the selection of the Rams, and also of the Ewes, for unless the farmer is a judge, he is but ill qualified to carry on a farm such as described; turnips are also given to the cattle on the pasture, until wet and cold weather compel them to be taken into the yards; in average seasons, harvest is finished, and when the grain is all safely secured, ploughing the oat stubbles is immediately begun.

*November*.—The stock is all in, and on winter quarters; thrashing of the grain is commenced, the quantity regulated by the weekly consumption of straw, and the grain either sold, or stored in granaries—large quantities of turnips are stored for the cattle, and the sowing of wheat is commenced, which is continued up to the end of March, as the turnips are removed from the ground.

*December*.—Ploughing and storing turnips is continued unless prevented by frost, in which case casting manure from the yard to the field intended for the following fallow crop, along with thrashing, occupies the time.

*January*.—New Year's day, per chance, by first peep of dawn, the steward may tap at his master's bed room door, with the unwelcome news of a stormy night; the shepherds have been among the sheep during the greater part of the night, doing their utmost to prevent them being drifted up—all hands are now turned out, and in a few minutes the owner is on horseback; a short consultation with the principal shepherd, soon decides what is to be done; the most sheltered situations on the farm are selected, and after fighting several hours against the elements, (for it is with the greatest difficulty the animals can be got to move a step,) the wished for locality is gained—afterwards hay and oat sheaves are carried on horseback and scattered in small handfuls on the snow, and when the storm abates, they eat it up with apparently the greatest possible relish; they are fed so, until nature again puts on its more joyous face; the feeding of the cattle goes on quietly as usual, having plenty of hay and an abundance of turnips stored for them; thrashing, carting out manure, and when the weather admits, ploughing the land that has been two years in grass, for the following oat crop, occupies the month.

*February.*—The Ewes are now again taken from their pasture and put on full turnips, or given three or four hours a day according to circumstances; it adds much to the milk, and to the weight and staple of the wool; the Wether Hogs are also given a few oats along with their turnips; and here, sir, a great point has been gained in the management of sheep, although only applicable to the finest—bringing a sheep, 15 or 16 months old, to the value of twelve or thirteen dollars, amply repays any expense that may have been incurred in the feeding of it. Ploughing, thrashing, and sowing of wheat, goes on in the season best suited to each.

*March.*—The land intended for the oat crop has all been ploughed; the drying west winds generally put some of it into a proper condition for receiving the seed by the fifteenth of the month, on the earliest situations; potatoes and oats are got into the ground as quick as possible; three to four bushels per acre are the quantities generally sown, and five of the Hopeton, Angus, and all other varieties of the common oat. The manure that has been carted out to the fields, intended for the turnip crop, is now turned over, whenever hands can be spared for the purpose.

About the middle of the month the Ewes begin to Lamb, and as they are dropped they are immediately taken from turnips and put on their own pasture again. When the weather is wet and cold, intermingled with showers of sleet and snow, the shepherds have no sinecure; constant attendance, night and day, to give assistance to the mother, and watch the young ones, for in those storms so frequent in Great Britain, natural affection for their offspring appears often lost, leaving their young, and intent only on providing for themselves.

*April.*—with its soft balmy air and genial showers, appears to reanimate both the animal and vegetable kingdom—the grass fields begin to put on their dark green mantle, and cattle and sheep a more cheerful countenance.

The sowing of wheat and oats is finished, and that of barley, clover and rye grass begun—two and a half to three bushels of the former, and half a bushel of the latter, if annual or perennial, or if Italian rye grass is used, one bushel mixed with twelve pounds of red and white clover; and if the pasture is intended for sheep, two pounds of Parsley seed per acre, is a valuable addition.

The fallow break receives what is called the first spring furrow, that is, ploughed across, and that as deep as two horses can do it. The cattle and sheep that were put on full turnips in October, are now as fat as they can be made—the cattle in the well littered yards, the sheep on the turnip fields, stretched at their ease, occasionally licking their sleek and glossy skins—oftentimes have I stood for hours admiring them, and imagined, what I never could discover among the human family, perfect contentment.

*May.*—Preparations are actively going on for the fallow crop; calculations and arrangements for stocking the pastures, occupy the attention of the owner; and we being at the point from which we started, for the present we pause.

SPECTATOR.

*From the New York Farmer and Mechanic.*

### ON THE HOG.

**Messrs. FLEET & STARR.**—At your request, I forward you an account of my mode of treating hogs.—I have on my farm an orchard, containing many choice fruit trees, bearing sweet apples. They were planted expressly for hogs, apples being the principal

food on which they are fed during the season; sometimes, by way of change, they receive sour apples, always fed raw, at regular hours. The food is occasionally varied by adding garden refuse, such as cabbage leaves, cauliflower, &c., together with the slops from the house. Unless so fed, a more expensive animal can scarcely be kept, especially in a country where corn can be sold for from 62½ to 75 cents per bushel, and other grain in proportion.—This is a luxury my hogs never partake of. If corn and apples were worth the same per bushel, I would feed apples in preference; the pork is sweeter, and fifty per cent whiter; it may lose a little in boiling; if it does, however, I have never noticed it. They are the most prolific animal we have, producing at a birth numbers varying from six to twelve twice in each year, if found desirable by the owner. In eleven years a single sow, averaging at each litter six pigs, will, in ten generations, produce six millions, four hundred and thirty-four thousand, eight hundred and thirty-eight pigs. Extend the calculation to the twelfth generation, and the result would be as great a number as all Europe could support, and to the sixteenth generation, the whole world would be overstocked.

When my sows are pregnant they are kept apart from other hogs; at the birth of the young pigs they are removed for a few hours from the dam, as they are in danger of being injured by her motions. She is fed judiciously for the first five days, after which she is allowed a full quantum of food three times each day, but never overfed. Her troughs are cleaned after each meal, and her pen daily, after which it is littered with fine broken straw.

The pigs are daily accustomed to feed on milk mixed with bran, and at the age of two months weaned. They are always kept in confinement, converting rubbish into manure. My second brood of pigs are sent to the New York market, and are sold to the packers as roasters.

The store hogs are wintered chiefly on sugar beets and carrots, occasionally boiled potatoes, and frequently charcoal dust, which keeps them in perfect health, their legs are often rubbed with a corn cob, to open the issues and cause the blood to circulate freely, otherwise staggers may ensue. I fattened two hogs year before last entirely on sweet and sour apples, fed alternately. For three or four months they received no other food, except occasionally charcoal—water even was denied them. They weighed, when killed, two hundred and fifty pounds each; the whole hog was covered with a very thick layer of fat, perfectly white and firm; the skin was thin, and the pork pronounced by connoisseurs exceedingly fine and sweet; the hams were not inferior to Westphalia.

This last year, 1845, on the 1st of October, I confined sixteen hogs in an enclosure about sixty feet square, in one corner of which I placed all my pomice, after having extracted the cider, and permitted the hogs three times each day to partake of it one hour, in which time they completely filled themselves to repletion. They were allowed no other food during October and November; the first week in December they were killed, and fatter animals I never saw. They were sold in New York for two cents per lb. above the market price. I am, &c. R. L. P.

*Remarks.*—We deem the experiments of Mr. Pell of great importance, especially in the older States. If farmers can cultivate fine fruit, send the finest to market, feed the refuse to stock, and thus avoid fattening their hogs in particular, on grain, a very considerable per centage will be added to the profit of farming.—Ed.

# THE AMERICAN FARMER.

BALTIMORE, MARCH, 1846.

## Maryland Farmers' Club.

The next meeting of the Club will be held on WEDNESDAY, the 11th inst. at half past 11 o'clock, A. M. at the office of the President, in N. CHARLES ST. near Fayette.

Gentlemen disposed to join the Club are requested to signify their wishes to any of the members.

By order of JOHN GLENN, Esq. President.

SAML. SANDS, Rec. Sec.

☞The continuation of the treatise on *Farm Accounts*, by "Cincinnatus," is unavoidably deferred until next month.

☞A valuable paper on the mode of curing Tobacco, in Mason Co. (Ky.) from the pen of Judge Beatty, is on file.

☞Just as we were closing our columns for the month, we received the 5th part of *Coburn's European Agricultural Tour*, and have consequently not had time closely to examine it—but shall do so in time for a notice of it in our next. Subscriptions to the work, \$5, to be completed in 10 numbers, received at our bookstore.

GUANO.—It will be seen by the advertisement of Messrs. Rodewald, that they have made a reduction in the price of their Guano.

MARYLAND FARMERS' CLUB.—The meeting called for last month, being appointed for the evening, was but thinly attended; and the experiment has proved that the day-time is most suitable for the assembling. It will be seen that the next meeting will be on the 11th inst. when it is hoped a very general attendance will be given. As the Legislature adjourns the day before, we expect to enjoy the presence of some of our friends from Annapolis on the occasion.

PAGE'S SAW MILL.—In former volumes of the "*Farmer*" we had occasion frequently to draw attention to the Portable Saw Mills of Mr. Gxo. PAGE, of this city, and we are happy to find that they have found favor and been of incalculable value in many parts of our country. We learn that a number of these mills have been purchased for planters, rail-road contractors and others, in the Southern and South-western States; that they have given general satisfaction, and been of great pecuniary benefit to their possessors. Our attention was called to the subject again, by the exhibition at the Exchange of a model of the Mill, in full operation, propelled by one of Mr. Page's sweep horse-powers, which we learn has since been shipped to Messrs. Braud & Landry, of New Orleans, to whose care a number of these mills have been shipped as factors or agents for planters in Louisiana and Mississippi. We shall take occasion hereafter to refer more at length to their value, as we conceive we can hardly render a more efficient service to the public, than by inducing their general adoption in districts where there are large tracts of timber land.

"THE FARMER'S BOOK, AND FAMILY INSTRUCTOR," is the title of a new work compiled by J. Pritts, esq. of Chambersburg, Pa. a copy of which has been presented us by the publisher. It comprises about 600 pages 8vo., is very handsomely gotten up, and is embellished with numerous engravings appropriate to the subjects embraced therein. "This book," says the editor, "is a compilation—the object of its compiler has been the simplification of the more strictly scientific and technical writings of the present age. Practical farmers require the simplest and most elementary statements"—and the labors of Liebig, Davy, Johnson, Good and others, have been laid under contribution, and a familiar digest of the recent discoveries of these and other celebrated writers is given, on the various subjects embraced within the scope of the work. We cannot better convey to the reader an idea of the character of the work, than by giving the descriptive title found on the first

page thereof, viz: "The Farmer's Book and Family Instructor, embracing the most important and recent scientific discoveries connected with practical Agriculture, comprehending a description of the nature of soils, the nature and value of Manures, the cultivation of plants, the husbandry of domestic animals, the cultivation of fruits, and the general economy of the farm, together with a variety of information of value to all classes, especially the farmer and domestic circle." The work fully comes up to the description of it, and we think \$2 (the price of the book) would be well laid out in its purchase. It will be on sale at our bookstore.

THE ALPACA.—We see by the N. York papers, that the American Agricultural association intend sending an agent to Peru for the purpose of selecting, and introducing into the U. S. the Alpaca Sheep. It is contemplated to raise the sum of \$10,000, which it is supposed will purchase 300 head delivered in New York—All persons or associations who subscribe \$500 or upwards will be entitled to a pro rata number of animals that may arrive—All subscriptions must be deposited with A. P. Halsey, Esq., Cashier of the Bank of New York, Treasurer of the Society.—R. L. Pell, Edwin Clark and J. S. Skinner, are the Committee appointed to superintend the purchase and importation.

THE POTATO DISEASE.—We copy from the Feb. number of the *Farmer's Library*, an interesting paper upon this subject, by C. MORREN, Agricultural professor in the University of Leige. It will be seen that the learned professor refers the disease to a mushroom, capable of multiplying its spores to any extent,—and recommends a soak for the seed potatoes, comprised of the sulphate of copper, (blue vitriol,) and sult, and that they should be subsequently rolled in lime. The cause to which professor Morren refers the disease, is the same as that assigned by professor Techemacher, of Boston, in 1844, and we are free to confess that there is much plausibility in it, and that there is not less in the preventive remedy which he prescribes. We commend his paper to our readers' attention, and would suggest that they should make such experiments the coming season, as will test both the correctness of his theory as to the cause of the potato disease, and the remedy recommended. As to the latter, if he be correct in his conjecture as to the cause of the disease, we entertain no doubt that it would prove effectual.

In thus speaking of the result of Professor M's. researches, we wish not to be considered as admitting their entire correctness—for "who shall decide when doctors disagree?"—we know that some of the best practical and most intelligent farmers of our own and other States, have come to quite a different conclusion upon the subject, elicited by their own experiments and close observation—this is shown by the paper of Mr. Gowen, published in the present number.

We have received a communication from Prof. BAER, on this subject, which was intended to have been read at the last meeting of the Farmers' Club—the late hour at which it reached us, allowed not sufficient time to have executed engravings of the drawings which accompany his report, for this month's paper.

THE SILK CULTURE.—We are not among those who, because the speculating mania in the Mulberry, a few years ago, drew off the attention of the friends of the Silk Culture from the legitimate object which they had in view—the introduction of its manufacture into our country—that consequently the whole matter was a humbug—we still entertain the belief that it is destined to be an important branch of domestic products, and that the happiness and comfort of thousands are to be derived from this source. It may not answer in all sections of our widely extended land, and it may be years before it can be brought to that perfection which will make it



a source of traffic on an extended scale; but that it can be successfully introduced as a household manufacture, we have the evidence before our eyes, and the substantial fruits in our possession.

One of our oldest patrons in the South, who was among the sufferers in that general crash which a few years ago took place in consequence of the derangement of the monetary affairs of our country, and who has not been able to be as prompt as he otherwise would have been, in his remittances for our "Farmer," enclosed us along with a \$10 note, a sample of most excellent manufactured silk, and a skein of the same material, which we believe would command a most liberal price, and bear a favorable comparison with most of the imported on sale in our stores.—The history of the same, we will leave him to tell for himself.

To the Editor of the American Farmer :

DEAR SIR,—I have been a subscriber to your valuable paper, and to its predecessor, from the commencement of the Farmer & Gardener; and whilst my circumstances permitted, I paid punctually. But now, from causes formerly hinted at, which still continue, I have been long in arrears. The enclosed ten dollars, is all I can spare you at present, but hope, (for I still continue to hope,) eventually to pay all. I thank you for your indulgence, in continuing to send me the Farmer, in its improved form. I should miss it, and my numerous family of children, who are growing up practical farmers, would miss it as they would the face and conversation of a highly esteemed old friend, were it discontinued. As an evidence of its utility in my family, enclosed is a sample of the *silk* in which my females are all clothed, and of Sewing Silk, the sales of which support them genteelly. They were prompted to its culture by your paper, and received their first instructions in this business from it. The money enclosed was received from its sales."

The samples can be seen at our store.

**FOREIGN NEWS—PROSPECTS, &c.**—Since our last, the steam packet ship Cambria has brought advices from England, which, upon the first blush appeared to give great hopes of a speedy termination of the Oregon controversy, the British government and press both seeming to manifest a peaceful spirit; but notwithstanding thegivings forth of both were of that character, the preparation to place Great Britain in an imposing attitude for war were not only unrelaxed, but being pressed onward with increased energy.

The project of a reduction in the British Tariff, as submitted by Sir Robt. Peel, inspired the commercial mind here with more hope than perhaps any substantial benefits to result from it would justify. Many articles, as the schedule below shows, of American product, are to be admitted *duty free*, others at a reduction of 100 per ct. Bacon, which formerly paid 14s. per cwt. duty, comes in under the *free* list, yet strange to say, a distinction against *hams* is made, which is to be subject to a duty of 7s. per cwt. With us *hams* would be construed to mean *bacon*, from the Ocean to the Red River; but in England it appears

to be considered otherwise, unless cured in the *side*, and then it passes as *bacon*. In this latter form, the importations from this country will be made, as brother Jonathan knows the value of the dollar. The duty on *Indian Corn* is proposed to be brought down from a very heavy duty, to 1 shilling, which would make the duty on a *bushel* about 65 cts. Whether, when the costs and charges are paid on the transportation from this country to England, and the duty added, *Indian Corn* will bear export, remains to be seen. Tho' greatly reduced, still the duty of 1s. on 14lbs. will we fear operate against its finding a market in that country to any great extent. If it were to be admitted *duty free*, it would be another matter, as we are very certain that it would take the place of the substances now consumed in Britain as food for horses, and for the fattening of beeves and sheep for the shambles—but we doubt whether it will bear a duty of 65 cts. the bushel. Once introduced into England, and its virtues as breadstuff tested fairly, we should not despair of its gaining favor in that regard with the operatives—at present, however, the English taste is not prepared to appreciate it for bread, luscious as it is, when well prepared in the right sort of cakes or pone.

BRITISH TARIFF. PRESENT DUTY. PROPOSED DUTY.

Bacon,	14s per cwt.	Free.
Beef, fresh,	8s do.	do.
" salted,	8s do.	do.
Hay,	16s do.	do.
Hides,	2d per lb.	do.
Meat,	8s per cwt.	do.
Pork,	8s do.	do.
Buckwheat,	—	1s per quarter
Butter,	20s per cwt.	10s per cwt.
Candles, tallow,	10s do.	5s do.
Cheese,	10s do.	5s do.
Clocks,	20 per cent.	10 per cent.
Hams,	14s per cwt.	7s per cwt.
Hops,	90s do.	45s do.
Indian Corn,	heavy duty.	1s per quarter
Rice,	6s per cwt.	1s do.
Tallow,	3s 2d per cwt.	1s per cwt.

GUANO.

To the Editor of the American Farmer:

SIR,—Since my former communications to you on the subject of Guano, I have had the experience of its effects upon my wheat crop, and it affords me great gratification to say to those of my brother farmers who take so much interest in the subject as to read communications upon the result of its use, that its effect was most beneficial, both as regards the appearance of the crop and the ultimate weight of the grain.

Thinking thus highly of its use as a manure, I am very much pleased to find that some enterprising merchants, Messrs. Rodewald of Baltimore, have imported, from the coast of Bolivia or the northern part of the coast of Chili, Guano that is found beyond the limits of the government of Peru; the government which established the odious monopoly of which I formerly complained.

It appears of the utmost importance to us, as cultivators of the soil, to encourage those who, by their enterprise, enable us to resist the exactions of those in whose favour the exclusive privilege exists.

It is true that it behooves us to take care that we do not purchase an article, the quality of which cannot be assured: with the desire of protecting myself I solicited from Messrs. Rodewald, the importing merchants, a sight of the analysis which I understood they had obtained. These gentlemen, with a courtesy and frankness becoming honorable men, supplied me not only with one made by Professor Ducatel, but with a second which had been made in England.—They are both of them indicative in the Chilian Guano, of qualities little inferior to the Peruvian Guano. Indeed it would seem by reference to the map that the Islands from which the Bolivian or Chilian Guano is procured, lie within those degrees of latitude, in which, on that coast, little or no rain falls, and supposing, which no one can doubt, that the birds which deposit the Guano, frequenting the Islands along the coast, feed upon the same animal matter, there can be little or no difference in the substance dropped by them.

Fortunately for us the price at which the Bolivian or Chilian Guano is offered by the importers is five dollars per ton below the price of the Peruvian—this is not a trifling advantage. I am glad also to find by reference to the prices of the different kinds of Guano in England that the relative difference, or nearly so, observed in England, is found here also.

In England Peruvian Guano is selling at \$50.82 per ton of 2240lbs. whilst the Chilian or Bolivian is selling at \$43.56 do.

The analysis made in England shows clearly enough that 90 per cent. of it consists of substances that are such as grain requires to be brought to its greatest amount of production. I subjoin it—of 100 parts it consists,

Azotised organic matter with phosphate and Urate of Ammonia,	21.5
Phosphate of Magnesia and Lime,	49.5
Do of Soda and Potash,	4.5
Sulphate and Muriate of Potash & Soda	5.
Carbonate of Lime,	1.5
Siliceous and Earthy matter,	8.
Moisture,	10.

100

We ought to do all we can to break down a monopoly, and it affords me great pleasure to say that the privilege now enjoyed by a few in the exclusive sale of Peruvian Guano terminates this year, never I hope to be renewed.

In your next number I will lay before your readers a short history of the circumstances by which it was created, and of the unsuccessful measures taken to renew it.

I desire in this communication to say nothing to derogate from the usefulness of African Guano, of which I am about to use two tons as a top dressing for my wheat.

I shall use 2 cwt. of the Chilian to the acre, upon a field of 12 acres for corn, spreading it broad-cast and ploughing it in, a plan which, I believe will, by means of the plough and subsequent harrowing, incorporate the manure intimately with the soil.

I hope to be excused for the intrusion upon the attention of my fellow-agriculturists, but the controversy in which I was engaged last year has not abated my interest in the subject; subsequent experience has raised in my estimation, the importance of Guano as a manure—one equally cheap, convenient and efficacious.

I am, Sir, yours respectfully,

FRANCIS FINCH

Plum Point, Feb. 22, 1846.

### BONE MANURE.—Continued.

There seems to be some difference of opinion as to what constitutes the fertilizing principles of bones. Prof. Liebig, in the third edition of his Agricultural Chemistry, says, "the efficiency of bones as a manure does not depend upon the nitrogenized (organic) matter, as has been generally, but erroneously supposed, but upon their phosphate of lime." Prof. Johnston, and many others, attach much to the gelatine, which slowly decomposes and affords to plants nitrogen. The gelatine or organic part of bones, is, chemically, like horn, hair, wool and skin—and as these substances are all known to be good manures, the gelatine of bones must operate in the same way.

The oil or fat in fresh bones, if applied to the soil without any preparation, I think, cannot be of much use, as it consists entirely of carbon, and the elements of water—oxygen and hydrogen. When buried in the soil, it is almost as indestructible as charcoal. If muscle, lean meat, and animal fat, are mixed in a heap, and exposed to the action of the weather, even in the hottest part of summer, the muscle (lean meat) is soon decomposed, but the fat will run together and be converted into a substance resembling old cheese or spermaceti: the fat in bones will probably do the same.

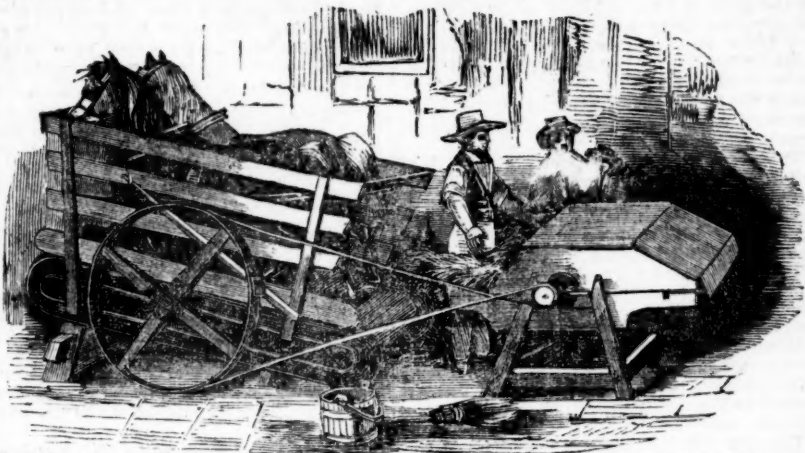
There are several ways in which a farmer may make use of bones for manure, in the country, where there are no mills to grind them. He can break them up, and apply them to the soil in the broken state: they will in that way gradually give out nitrogen and phosphate of lime for at least "three lives."

They can be burned, and then they are easily broken up, and can be dissolved in sulphuric acid: the fire, however, drives off all the animal matter. Or they can be boiled in strong lye, and in a few hours they become disintegrated and as fine as meal. By this process, the nitrogenized part—the gelatine, is mostly driven off, and the air of a room in which they are boiling, smells as strong of ammonia as the hold of a guano ship: but the oil and fat are converted into a kind of soup. The whole can be mixed with muck or soil, and will make a first rate manure for the turnip crop.

I have boiled some bushels of horn-piths into a pulp, in three hours: the harder bones require some longer time. Without doubt, if there was a portion of sulphuric acid mixed with the lye, the bones would come to pieces much sooner, and the ammonia would probably be fixed by the acid, and formed into sulphate of ammonia—unless it should combine with the potash of the lye, or the lime of the bone, as it has a stronger affinity for these.

As stated near the commencement of this, rather more than one-half of dry bone is phosphate of lime—in the proportion of 51½ per cent. of lime, and 43½ of phosphoric acid. By mixing about one-half the weight of sulphuric acid diluted with water, double decomposition ensues—one-half the lime of the bone combines with the sulphuric acid, and forms gypsum. The other part of lime combines with a double equivalent of phosphoric acid, and super, or biphosphate of lime is the result. Phosphate of lime is very insoluble—biphosphate is much more soluble, and is readily taken up by the rootlets of plants—especially by the wheat crop. About one-half the ashes of the grain of wheat is phosphate of lime. Phosphate of lime and potash are found in the ashes of all our forest trees, but it is so very insoluble that it is not extracted in the process of leaching for soap making, and unquestionably, much of the value of spent ashes depends upon the phosphates they contain.—N. E. Farmer. L. B.

## GRAY'S ENDLESS-CHAIN OR RAIL-WAY HORSE POWER.



To the Editor of the American Farmer.

Dear Sir:—Having consulted the wishes of several of our most influential agricultural customers, and being frequently persuaded to manufacture the most perfect endless chain horse power, that could be obtained in this country; has induced us to examine the various models at the patent office, and also several Eastern Horse-powers, made on that principle. This examination has determined us to manufacture exclusively

GRAY'S ENDLESS CHAIN OR RAIL-WAY HORSE POWER,

which combines (in our estimation) greater strength, power, astonishing ease of draught and simplicity, of any that has come under our notice. The main body of the machine (as shown by the cut) is a Cast Iron endless rail-way, upon which the rollers attached to

the chain revolves—If those complicated drums, axles, &c., generally attached to this description of horse power are *expunged*, and the whole machine reduced to the utmost simplicity; in short, it is just the article to meet the wants of our Maryland farmers, affording power sufficient for any machine they will have occasion to use. We also make a one horse machine on the same principle for small farms, manufacturers, &c. The Threshing Machine attached to the Horse-power (as shewn by the cut) is our largest size, and the same that has become so generally used and so highly approved of in this, and the adjoining states. We are also making as usual, a large supply of Sweep or Lever Horse powers, suitable for two, and strength, sufficient for the draught of eight horses; price 100 to \$150.

R. SINCLAIR, JR. & Co.

[The following paper was intended to have been read at the last meeting of the Farmers' Club.]

EXPERIMENTAL REPORT to the Maryland Farmers' Club, on the POTATO DISEASE, by DANIEL BOWLY, Cor. Sec.

FURLEY HALL, Feb. 10th, 1846.

Numerous and conflicting as are the arguments, which have been recently held, in the various attempts to discover the *nature* of the disease in the Potato, now prevalent; and if detected, what *remedy* could be effectually applied—the majority, both as regards authority and number have satisfactorily established the fact, that it is a fungus, of an excrescent or parasitic character. Equally well sustained have been the numerous assertions, that a remedy has been successfully applied.

The most authentic paper on the subject, which has fallen under my observation, among some hundreds, is the Report by C. Morren, Professor of Agriculture in the University of Leige.

Imperfect in idiom, as is every translation from the German into the vernacular, it covers the whole ground; exhausts the controversy, and, in accordance with my own *experience*, establishes the main practical facts, essential to the producer's safety.

Before departing from my allusion to Prof. Morren's able Report, I think it necessary to contest an

error, into which certain late writers on the subject have unwittingly fallen.

This peculiar distemper, like all other important facts, has its history. In Mexico and South America, where the tuber is indigenous, it has *always* been known as an *epidemic*; recurring at irregular periods, and eccentric in its progress.

The terms *epidemic*, *contagious* and *infectious*, are often confused in their application, even by the Medical profession. In the Report alluded to, the word *ansteckung* is rendered *infection*; being literally "*stuck-on*" or *extraneous*—from the verb, *anstecken*—while the German equivalent for *epidemic* is *ansteckend*; and *contagious* is expressed by *ansteckend*—so that this word, as used by Prof. Morren, embraces the whole sense of the three words, in their widest construction, and he pronounces the potato disease, after the most skilful and patient examination, to be of this character.

In our own language, we understand that whatever is *prevalent*, is, *where* it is so, *epidemic*. Certainly no one at this advanced stage of the discussion, will assert that the potato disease is *not prevalent*! *Infectious* and *contagious* convey almost precisely one meaning; commonly called "*catching*." My own observation, as regards the tubers after housing, is that this disease is *all of these*, in their fullest sense.

Relying upon the usual supply from the East, for my seed potatoes, I had disposed of my own crop, and purchased thirty bushels for early planting, of blue Maine mercers, at the wharf—This was the middle of Feb. last; but before planting time arrived, nearly one-third of that quantity had decayed, although they had frequently been picked over. When purchased, a scarcely perceptible scurfy gangrene, in spots, had made its appearance on them.

Ten bushels were cut and planted on the 7th of March, in strong alluvial soil, in drills, under fermenting stable manure—the pieces immediately on being cut, were dried, or heated, in a compost of two parts each of plaster (sulphate of lime,) and leached ashes, to one part old slacked (carbonate of) lime.

The mem in my diary reads thus:

1845. March 7.—“Planted early potatoes across run; pieces cut large; dried in plaster, ashes and lime, and planted under horse manure.”

March 25.—“Planted five bushels potatoes near Poultry yard; the eighth row from the east side, without manure, to be guanoed when up—the rest planted on long green manure; all in drills; pieces six inches asunder.”

The yield of this first planting was very good, notwithstanding the drouth, but being very early, were sold in market—The latter not so well—the guanoed row excepted, which yielded equal to the first planting, or one fourth more than the second.

There was also another small planting, besides the “Crop”—a sample of the last, I now hand for the inspection of the Club—which, they will perceive, are in a perfectly sound condition.

I have cited from my diary thus minutely, to correct two errors, almost as much prevalent as the disease. The first, that the kind of manure, produces the fungus—the second, that it is the nature of the soil, combined with, or arising from the humidity of the atmosphere—now my several plantations were in all the varieties of soil, except stiff clay; and in all manner of exposures—from the hill top to the ditch level.

Undoubted authority overthrows a third error—that is—the wetness of the season, combined with a sultry denseness and other atmospheric phenomena, generate the mushroom.—A friend of mine, a member of this Club, lost his whole crop, of last summer's growth, whose place is but five miles distant from mine, inland, and some hundreds of yards higher above the marine level, the seed being of his own growth, and apparently perfectly sound.

In fine, gentlemen, not one diseased potato have I yet seen in my crop, although the seed from which they were grown was corrupted, and the old-fashioned stimulants, except in the one instance, were used as manures—so that, in the absence of any antagonist principle, I must consider this chemical compost, not only a remedy, but a preventive of the epidermic potato fungus.

From the Farmer's Library.

#### POTATO DISEASE.

Report on the cause of the Potato disease, by C. MORREN, Professor in the University of Leige, together with a preventive remedy.

It is known that a general malady has stricken the Potatoes in Belgium, and it appears that the crop of this most necessary production is there much compromised. As it is said that this malady threatens also the Potato crop in France, we believe it right to reproduce here the advice that Mr. Morren, Profes-

sor of Agriculture at the University of Leige, has addressed to the public in a letter that we find in “The Independence,” of Brussels. Mr. Morren, after stating that this evil has for several years existed in Belgium, although in a less alarming degree, adds:

“The true cause of the evil is a mushroom, a mouldiness, the learned will class in their genus ‘botrydis,’ but that the agriculturists hardly distinguish, which they call a burn, a fire, a stain, and which some attribute to humidity, others to dryness; some to a bad wind come from France, others to insects, &c. &c. It is not, however, indifferent to us to know the true cause of the phenomenon, for this knowledge will put us in the way of diminishing the scourge, and possibly of destroying it.

“For some time I have followed every day, and step by step, the progress of the evil, in observing several fields of Potatoes. The malady commences decidedly in the upper part of the leaves; I have even seen the flowers and fruits attacked in the first place. A part of the green tissue loses its tint and turns promptly yellow; the stain soon becomes more grey below, and it is always on the lower surface of the leaf, or on the fruit, where, a day or two after the appearance of the yellow stain, a whitish down shows itself. The microscope discovers then that this down proceeds from a mushroom which grows between the numerous hairs which garnish the bottom of the leaf of the Potato. This mushroom is of an extreme tenacity; but it breeds and reproduces itself by thousands. Its stems are formed of little straight and partitioned threads, which have at their summit one or several branches, always divided in two, and at the end of these branches reproducing bodies develop themselves which have the form of eggs, but which have not more than the hundredth part, or even less, of a millimeter in size. I may be told it is a very small body to commit ravages so great; but I answer, the itch is not the less to be feared because the animalcule which produces it is a microscope being.

“After the formation of the yellow spot, and the development of the ‘botrydis’ on the leaf of the Potato, the stem receives the deleterious influences. Here and there its surface becomes brown, blackens, and when the phases of the evil are followed with the microscope, it is soon perceived that the stem is attacked through the back. The morbid agent carries its action from the bark to the skin, and although this does not always offer mushrooms, it is not the less stricken with death; for to any one that has some notions of vegetable physiology these effects easily explain themselves. The sap modified into living juice, into vegetable blood, forms itself in the leaf, and then descends into the stem and the root, by the bark. Here this sap is sick, modified, it carries the poison of the leaf into the stem, and this perishes. Indeed, so soon as the black spots declare themselves on the stems the leaves become dry and die—blackened and stricken with death by a venomous mushroom, they fall, unfortunately, to propagate the source of the scourge, or to deposit its germ in the earth. I will soon indicate the means which should be taken, to prevent this fatal communication.

“The infection soon descends into the tubercle itself. If the evil follows its course, the tubercle immediately gangrenes. A Potato is not a root, but a branch; it follows from that, that a tubercle possesses a marrow which is the eatable part to be preferred, and a distinct bark. Between the marrow and the bark is found a zone of vessels which represents



wood. One can easily understand this structure by cutting a thin slice of Potato and placing it between the eye and the light. Now the infection attacks the part which receives the descending sap, that part where the morbid agent has itself descended. Upon a Potato attacked, one perceives a series of livid spots, brown or yellow, sometimes grey or blackened—a series which extends itself throughout the woody zone. In following the process of the evil over a great number of spoiled tubercles, I could see how the disease, increasing by small degrees, finishes by reaching the heart itself of the Potato, and corrupts it entirely. The skin of the sick Potato easily detaches itself; the flesh no longer cracks under the knife; a discolored flaccidity, a fade, and, later, an animal smell, analogous to that of mushroom freshly cut, declares itself and carries off the heart. The animals even refuse to eat a food which may be regarded to be quite as injurious as deteriorated mushrooms themselves.

"So soon as the Potato is gangrened within, that is, in its cortical part, but a few days, three at the most, are sufficient for the mushroom (the 'botrydis') to show itself without. This white efflorescence is seen to declare itself in the eyes of the tubercles, and then extend itself like light, white flakes, at first upon a rounded surface, but which finishes by invading the whole tubercle. The Potato is then entirely lost.

"The source of the evil being known, all the attention of the cultivator should be directed toward the destruction of the mushroom; for it is unfortunately too true that the blight, the rust, and all the race of parasites once introduced into the country, they remain there and propagate themselves. This year the epidemic has been general; every where the germs of it exist; millions of that which propagate it, if their number be not diminished, will attack plants the approaching year, and it will then be more difficult than ever to eradicate the plague, to do which it is essential to adopt the following means:

"1st. When the leaves are lost they must be collected as quickly as possible, and burnt upon the spot, without being transported to a distance. The ashes may be spread upon the soil. In collecting them they must be shaken as little as possible. I have seen, with regret, the farmers collect the sick leaves to preserve them in a pile in the field, or to cast them over the hedges. This is to preserve the plague for the next year.

"2d. When certain varieties of the Potato, or certain localities are free from the calamity at the time of the crop, it is always prudent to burn the leaves; for a field may appear clear of the 'botrydis' when it is not so. Several leaves are attacked; these leaves throw out the seeds of the disease upon the tubercles, which, preserved as seed, will preserve the disease the next year.

"3d. If the tubercles are themselves attacked, it is essential to take them out of the earth to make a prompt choice out of them, which is easy, for habit soon enables one to recognize the spoiled tubercles from those which are not so. The sound tubercles ought to be used as soon as possible, for they are not injurious up to the moment the bark becomes yellow. The smell alone is sufficient to detect the development of the malady. The sick tubercles should be burned.

"4th. To obviate the sorrowful consequences of a crop which will be always reduced either a half, or a third, or even less, than an ordinary crop, it would be important to follow, in our country, the

method practised in Scotland in cultivating Potatoes during winter.

"5th. Since it is very probable that the seed-tubercles that may escape from the present crop will be infected with the germ of the mushroom, it would be well if by the intervention of the Government or commerce the farmers had at their disposal pure seed-tubercles, that were not infected; and for this purpose, the Potatoes of Pennsylvania or Ireland would suit us exceedingly well. The plague is not known in those two countries. We must distrust the Potatoes of Germany, where the dry gangrene, the shriveling (*la crispure*) and the ulceration of the tubercle is but too common; and we might take advantage of this importation to endow the country with those varieties of Potatoes which are most congenial to our soil.

"6th. If the farmers are obstinate in employing, as seed, tubercles of this year's crop, it will be necessary to subject them to liming, as is done with wheat, rye, oats, and all plants which are subject to be invaded by parasites. The liming ought to be done by immersing the tubercles, because the study of the habits of the 'botrydis' shows it is the eye, the deepest point of the Potato, which is attacked. The limed water should then bathe this leprous eye. 25 kilog. of lime,  $\frac{1}{2}$  lb. of the sulphate of copper, and 3 kilog. of marine salt, to 125 litres of water, constitute a liming of which the useful effects have been acknowledged by a great number of instructed cultivators.

"7th. In the plantations, either of the winter of 1845 or the spring of 1846, it is essential to plant in Potatoes, parcels of ground as distant as possible from those infected this year, for it is easily understood that the chance of transmission, by the preservation, in the soil, of the seed of the mushroom, is much greater in plantings that approach each other than if they were made at a distance.

"8th. When the Counselor de Martens visited Belgium, and inquired in our different provinces the state of our Potatoes, he informed me, in one of his interesting conversations, that the farmers on the borders of the Rhine had remarked that the dry gangrene attacked oftener the Potato plantations made in the afternoon, than those made in the morning; and he explained this phenomenon, which at first appeared singular, by a simple fact. When the sun has passed the meridian, the heat of the strata of air is at its maximum: this heat accelerates the vitality of plants; that which propagates them flies more rapidly in a dilated air; the insects, in their flight, disperse with facility a mass of little bodies, of which the air is the vehicle; and the dissemination of their germs is then also at its maximum. The farmer is plunged in this atmosphere, and he causes to pass through it the Potatoes which he plants; it attaches itself to the seed, and is sown with it; and that happens here which occurs to the grain not limed—the poison is sown and grows with the plant, to attack and kill it at a later period. From which arises the advice we give to the farmers, to plant their Potatoes in the morning.

"9th. The employment of lime and marine salt, mixed with a small quantity of the sulphate of copper, is, as I have said, of a recognized efficacy in the destruction of the germs of parasite plants; consequently, to powder with these mixed substances the soil which has been planted with sick Potatoes, is an operation calculated to destroy the germ of the scourge, and cannot be too strongly recommended everywhere.

"10th. The preservation of the Potatoes that have escaped being attacked this year, in cellars, &c. will certainly deposit in these places the germ of the mushroom. To cleanse these cellars and whitewash them with lime are excellent means of destroying the germs, and to spread lime and pounded coal on the places where the Potatoes have been deposited, will finish the series of proceedings we consider the most rational and the most certain to destroy, if it be possible, the evil at its root.

[Signed]

"CH. MORREN,  
Member of the Royal Academy of Sciences,  
and Professor of Agriculture and Economy  
'forestier' at the University of Leige."

### THE POTATO SICKNESS.

*Correspondence between Mr. PETER, British Consul at Philadelphia, and Mr. GOWEN, of Mount Airy, on the subject of the Potato Rot.*

MR. GOWEN'S REPLY.

*Mount Airy, 29th Dec., 1845.*

MY DEAR SIR:—Your note on the subject of "the Potato Rot," dated Saturday, did not reach me at Mount Airy, Sunday intervening, till this morning, Monday. It would give me pleasure to oblige you fully in this matter, did time permit to go more into detail; but the brief space allotted for a reply will compel me to be as concise as possible.

I hold that atmospheric influence is the sole cause of the late pervading Rot in the Potato; that neither manures nor condition of soils could have produced the calamity; that animalcules and fungi are as remote from it—the latter may in a partial manner injure a Potato plant, as they would, under peculiar circumstances, be likely to injure other plants; that the Rot is *not* epidemic; and have reason to believe that sound or *partially* sound Potatoes, taken from a diseased crop or heap, will, if planted, produce healthy, sound Potatoes, in the absence of the cause which injured them the previous season.

I would therefore encourage the farmers to cultivate their Potatoes as formerly, choosing the soils and applying the manures which hitherto were found best adapted to their culture; forgetting or overlooking the Rot altogether, and disregarding the nostrums recommended for its prevention: the Potato won't bear doctoring.

The weather which produces Rot is either a severe, continuous drought of some weeks' standing, thereby preventing the natural growth and maturity of the Potato, for the want of moisture, or very hot weather, bringing the Potato to a premature ripeness, succeeded by wet, sultry weather, unnaturally *spring-like*, which provokes the tubers to perform the functions of seed, thereby dissolving the connection between them and their vines; the vines die; the roots undergo an incipient fermentation preparatory to decomposition: the operation of budding or growing is checked by the natural autumnal temperature that at length prevails, which arrests the Potato in its work of producing, and hence its deterioration. The latter condition of the weather is the prevailing cause of the Rot.

As to a severe and continuous drought, my own experience points to that of 1838. That season I had a five-acre patch in with Potatoes, which did not pay for the trouble of taking them out of the ground. They were small, ill-shaped, bad-tasted, poisonous, spotted and black-hearted, and rotted in cellar. Potatoes that season sold as high as \$1 25 and \$1 50 per

bushel—not a bushel of good Potatoes at market except those imported. Then as to dry, hot weather, succeeded by wet, close, over spring-like temperature, the season of 1843 is in point. I took more than common pains that year to produce a surpassing yield, equal, at least, to my famous crop of the preceding year, which was over 440 bushels to the acre—field culture. My seed was in part from those fine Potatoes, and in part from some very large, sound Potatoes imported from the State of Maine. On taking out the crop in October, the whole was found to be very badly diseased. The weather from the latter part of June till the beginning of September was mainly hot, occasionally very hot, and dry. September set in with warm rains, thunder-storms and gusts; the moisture and closeness unprecedented; fruit-trees blossomed, as well as many flowering-trees and shrubs; I recollect making a large collection of flowers from the magnolias, some of which I sent to the Editor of the "Pennsylvania Inquirer." My Potato vines looked green and healthy, when all of a sudden they changed color, drooped and died. I think if I had taken out the Potatoes at that juncture they would have proved comparatively good; but they were permitted to remain quite a month after, when they were found badly rotted, tainted, and almost worthless.

Now, then, as to the epidemic. In 1844, I planted some four to five acres of Potatoes, the seed of which was principally culled from the diseased crop of 1843. I planted, also, at the same time, in the same field, other seed of very sound potatoes brought from Maine; they all did equally well; *I could discover no difference*; the crop was a very fair one, and the quality unexceptionable in every respect. I do not mean by this to encourage the planting of diseased or doubtful Potatoes. It is safer to plant sound and perfect ones; but I am strong in the opinion that there is no danger of a diseased or tainted Potato producing a diseased or tainted Potato. It may, from its want of vitality, be very unproductive, make feeble shoots, the same as decayed Potatoes from on shipboard after a long voyage, the heat and moisture of the vessel's hold having caused them to send out enormous shoots, impairing their vigor, and producing Rot.—Such Potatoes, when planted, never produce well as to size and quality; but I have yet to learn that they ever produced a diseased Potato.

Much has been said of Potatoes becoming feeble and sickly from long and constant planting; there may be something in this; time will not permit me to examine it now. I have, however, numerous sorts of seedlings produced from the apples of my very fine crop of 1842. I shall take occasion to present you with a few to send to some of your friends abroad.

By this you will see that I can offer no remedy of preventive for the Rot. He that tempers the winds to the shorn lamb, can only control it. Should it again visit us, we can only exercise our best judgment by taking out the Potatoes early—as soon as they exhibit signs of decay—laying them in thin layers in dry, cool situations, or otherwise, as circumstances may justify. Let the farmers go on and plant in confidence, as their best experience may teach, trusting for the abundant yield to that Providence who sendeth the early and the latter rain.

Very respectfully your friend and ob't serv't.

(Signed)

JAMES GOWEN.

WILLIAM PETER, Esq., Her Britannic Majesty's Consul, Philadelphia.

## BONE MANURE.

Lauderdale, January 24th, 1846.

To the Editor of the American Farmer:

I consider "bone manure" one of the most important fertilizers of the many introduced of late years into our husbandry. Doubtless Guano is important when circumstances favor its operation, but in a dry season it will prove nearly if not quite a dead loss. So evanescent is it, that under the operation of heat and moisture, one season will exhaust all of its active properties, and should this not take place at the growing of the plant for the benefit of which it has been applied, it is likely to be dissipated before it can be made available to another crop. Such at least is my apprehension. Poudrette seems to have more permanency, but yet its durability is not to be compared to bone. All that I have ever read of the application of bone as a manure, confined it to sandy and gravelly soils, which had it been true in this country as seems to be the case in England, would limit its use very much, and preclude the use of it to those who would improve their clayey lands. An experiment made by me in the year 1838 expressly to test this matter has entirely put it to rest in my mind. I received from a friend 3 barrels of "bone dust" procured of a button maker in Philadelphia—it was literally bone dust, from which I expected prompt action (but not durability) if it should act at all on clay soil. As the object was experiment, I applied it to three different purposes—but the one which I am about to detail as having an immediate bearing on the question of its use on clay soils, I consider of most importance. In the Fall of '37 I sowed a piece of flat meadow land (*not swampy*) in wheat and timothy seed. This ground the spring of '36 was limed, and that summer cultivated in corn. Early in the summer of '37 manure from the barnyard was spread on it, and after rain enough to wash down into the soil the soluble part of the manure, the whole was turned under and left until near seeding time undisturbed by the plough—the harrow being used once or twice to keep down any grass or weeds that appeared. It was then ploughed, sowed and harrowed in, after which, the grass seed was sown and the whole rolled so as to make it as level as possible. The winter was exceedingly unfavorable to grain in flat lands, and this suffered very much. However, I determined to make a part of this the subject of my experiment. In Feb. '38 I measured off a piece, and spread on a barrel at the rate of 30 bushels to the acre. As soon as vegetation began to put forth in the spring, I found that the bone had made a decided impression on the wheat, and by the middle of May it was ahead of that on either side by 6 or 8 inches, and maintained its elevation until becoming too top heavy, it was prostrated by a rain; but was nevertheless well filled—so much for its effects on wheat. It was mowed regularly every season until ploughed up in Autumn of '44, during all which time its superiority was so obvious as to be noticed by any one at a considerable distance when ploughed up; the timothy had entirely run out on either side, while it maintained its integrity and showed a good sod of timothy and English grass (*pou pratensis*) which grass always indicates a good condition of the soil. The subsoil of this land is a perfect brick clay, and the soil is nothing more than a slight intermixture of vegetable matter with the clay, and has heretofore given only a couple of crops in return for any other manure applied. If it were not for the cost of carriage, I should certainly

use it largely. My lime burning operations makes it indispensably necessary for my wagon to make a return load of coal, so that I cannot say as some do, "we return empty any how"—If it were my case, I should have a supply of bone "any how" for certain particular objects—always to be used on land designed to be kept sometimes in grass—and *always applied on the surface*.

An enquirer in the "Farmers' Cabinet" asks what is the proper time to sow Orchard grass? Tell him in February, on lands in winter grass—but if with spring grain, after the first harrowing, giving it another to cover it superficially. My experience says, —If sowed in the Fall it is likely to be injured more or less by the winter—If sowed in the latter part of the winter it will be sufficiently covered by the action of the frosts, and will not vegetate so early as to be injured by the "lagging rear of winter's frost."

Z.

[The above communication is from one of the most experienced and successful farmers in the State, and his testimony in regard to the matters upon which he treats is worthy of the fullest reliance.—*Ed. Far.*]

## HORSE POWERS, &amp;c.

To the Editor of the American Farmer.

Plum Point, St. Mary's Co. Md.

Dear Sir:—After a long delay, I wish to give an evidence of redeeming my promise, which I made you last July when at your office. As there are several subjects which I promised to notice, I shall bespeak the indulgence of yourself and numerous readers, while I will promise to be as brief as possible in connection with the understanding of the subjects noticed. The 2 horse Rail Road Power, Thrasher, Straw Carrier and Separator, which I purchased of Mr. E. Whitman, Jr., one of which you noticed in the Farmer for July, 1845, and of which I promised to send you a notice after trial, has given perfect satisfaction. We have thrashed over 2500 bushels of wheat, besides oats; I consider the Rail Road principle for horse powers, the best I have seen; they give more uniform power, occupy less space, and are less liable to get out of order or be broken by restive or wild horses, and will wear longer, than any other I have seen; the Thrasher is not much different from many others, except two improvements, one is, it has ridges on the shaft of the cylinder which works in grooves in the plates in which it revolves, thereby retaining the oil much longer, and less liable to wear and let the teeth come in contact; the other is, the pulley on the end of the shaft, is so constituted, that when the power is stopped suddenly, the cylinder continues to revolve until it spends its speed without the necessity of casting the band, which I consider a great improvement; the Straw Carrier and Separator are simple, and work well, and promise to last much longer than I expected from their light construction. With the above machine, two horses, three men, and four women and boys, we have thrashed, cleaned and stacked the straw of 120 bushels of wheat in a day without any extra labor, though I consider 100 bushels a day's work—the horses do not labor very hard; we worked two without changing while they thrashed and cleaned 1000 bushels, without their being reduced in flesh; we found no difficulty in getting horses to work—we have tried 16 or 18, and they all worked well, though one had never been in gear before; one would not work in any gear, and one was very false, but since,

works well. I consider it a horse breaker—the work is well done, the wheat is taken clean from the straw and chaff and dust, but requires to be run through a fanning mill before sent to market; a two horse power and thrasher without the straw carrier and separator, with two or three hands extra, would thrash 140 or 150 bushels per day; but I do not think it could be done so well either as to separating the wheat and straw and chaff, or wheat and dust. Dr. C. M. Jones of this county has a one horse power and thrasher, which will get out 70 bushels per day with ease, and gives much satisfaction. Mr. Whitman's machines are gaining favor with the farmers every month, and I believe will come in general use in this county, if there is no better invented.

Mr. Editor, while I am writing, I will notice an insect which has made its appearance in this neighborhood a few days since. A few days before they were seen, there fell a snow of 6 inches—they are spread over a space of  $\frac{1}{2}$  of a mile up a road and in a woods on either side; they are 1-16 of an inch long,  $\frac{1}{2}$  as wide round, on the upperside flat, on the under have 8 legs, and crawl on the snow like wood lice, and hop like fleas, and they are in such numbers that the melting snow in the road carry them in lumps of a quart, and they are so numerous in the road that it looks dark for 30 or 40 yards before you; when dry (which they will remain, floating on the water in large lumps) they are of a blue black; when wet, they are very black. I was to see them yesterday, have secured some in a vial, and will let you hear of them again, and should like to know if you or any of your readers have seen or heard of any such winter insects, which can hop about on the snow for 3 or 4 days dry and active.

A Farmer requested me to desire you or some of your correspondents to inform him through the Farmer what is the component parts of oil cake so celebrated for fattening cattle, &c.\* You will confer a favor on your subscribers of this county by noticing the price of African Guano for 5 or 10 tons.† I shall, with your permission, in my next, notice some experiments with Ashes, Guano, &c. Now, Mr. Editor,

\*OIL CAKE is the residuum, or refuse, left after the oil is expressed from the seed of flax and rape. A bushel of linseed averages in weight about 51 pounds; this weight, when crushed, produces about a quarter of its weight of linseed oil, and the remainder is cake—1000 parts of it, according to Davy, contain about 151 parts of nutritive matter—Linseed oil contains a very considerable quantity of mucilage, which it almost entirely deposits by time; and hence old linseed oil is more valued by the painter, but for the grazier, its nutritive powers decrease by time. It is said by some persons, that it is to the presence of this mucilage that we must attribute the fattening quality of linseed oil when mixed with other substances, for linseed oil by itself is almost as powerful a purgative as castor oil, for which purpose indeed, it is very commonly employed by the farmer. Many farmers use ground linseed mixed with bran and chaff for their stock, deeming it a more economical plan than the employment of linseed cake—others use the linseed unground. The saving of this mode, however, is doubtful, for it is by no means certain, that the oil possesses any very material fattening properties; and if it does not, then the cake is decidedly the cheapest. The above is extracted from the Farmers' Encyclopedia, by Cuthbert W. Johnson, a work that is a library of itself, and which every farmer should possess, if he had none other.—Ed. Amer. Farm.

†African Guano can be obtained at \$30 to \$40 per ton, by the quantity mentioned by our correspondent.—We have heard that it has been offered at the first named price, and that many who used it during the past year, were very much pleased with its effects on their crops.

if this communication is too long, or too stale, use your scissors, or throw it under your table, and you will oblige your patron and obedient servant,

R. N. MILBURN.

January 27th, 1846.

For the American Farmer.

# BOSTON CENTRE DRAUGHT, OR "PREMIUM PLOUGH."

MR. EDITOR—Sir: I have read the notice over the signature of "One of the Judges of Ploughs," in your last number—and I agree with the "Judge" that "such articles" often proceed from "envy and disappointment," and "show excited feeling;" and that was the view taken by "Boston Plough," and was supposed to be the true cause of the production of the article "Premium Plow," and containing the words, "array and contending" of ploughs, in your paper of December last. I thank the writer, however, for exonerating me from such unworthy motives. And also thank him for the frank and favorable notice he makes of the "Boston Centre Draught Plough;" that "each of the committee was, (as he says,) a practical planter, and familiar with each sort of plough exhibited at the fair, and particularly familiar with the Boston Centre Draught, and partial to it." I am thus frank in making this acknowledgment, so that his collateral testimony may not be misunderstood nor lose its force.

Aside from this I would add, that from daily observation, the increased demand from various parts of the State, offer sufficient evidence that the merits of this favorite plough is now being appreciated by the intelligent yeomanry of Maryland and adjacent vicinity. This assertion is not made in any boastful spirit—but it is for practical men to judge for themselves what best suits and best answers their purpose.

This may truly be said to be an age of improvement and competition; and whatever means will ensure economy of time or increased despatch in the accomplishment of any desired end, will be performed and adopted generally by the community when once introduced. Hence in the mechanic arts, so many labor saving machines which are so desirable in the cultivation of the soil, and calculated to supercede the more tardy mode heretofore pursued, are now resorted to.

I have before me the By-Laws of "Prince George's Agricultural Society," and find that my position respecting them, as heretofore made, is correct.\* Nor have I seen any thing to alter my assertions in my previous communication. If, however, any more specific explanation be necessary, I would state, that what I intended to convey was, that as the "Boston Plough" had previously taken the society's premium as the best plough for all purposes, after trial, that it was, by its By-Laws, excluded from being exhibited a second time for competition. And therefore, inasmuch as Mr. Whitman had no other ploughs at the Fair, but the "Boston Plough," neither was there any other ploughs exhibited at the Fair, except those sent from the house of Messrs. Sinclair & Co., that

\*"Sec. 14. No animal or other article which has received or may hereafter receive a premium from the Society, shall be again brought in competition for a premium; provided this rule shall not be construed to exclude animals until they come under the class of aged animals. Cattle at three years old—Horses at four years old—or when horses are offered for entirely different purposes."—By-laws P. George's Agricultural Society.



they therefore had no competitor, (except to compete with themselves,) but that the field was open and fair for them, for the reason that there were no parties present for competition. And in any event, there was no trial of ploughs at the Fair, it matters but little in such case, who took the premium. Again, the "Judge" will, I trust, accord to me this much, that so far as he knows me, I am no aggressor. I have deemed this exposition as being called for, in answer to his communication; and it being final with me, I shall cheerfully submit it to an impartial public, to render "honor to whom honor is due."

—BOSTON PLOUGH.

### THE SILK PLANT FROM TRIPOLI.

To the Editor of the American Farmer:

On reading an account of the Silk Plant from Tripoli, in Skinner's Journal, I was reminded of an amusing hoax that was practiced upon the celebrated Dr. S. L. Mitchell, many years ago. The Dr. was well known to be somewhat visionary as to the future, and an enthusiast in new discoveries and improvements. He received a parcel described as "Illinois cotton, an indigenous production of the Ohio river bottoms." The Doctor thereupon discoursed most eloquently through the public journals, upon the fitness, silkiness, and beauty of the article, its suitability for manufacturing, and the importance of its culture. The article was afterwards discovered to be entirely worthless—the down that envelopes the seed of the cotton wood, one of our gigantic forest-trees. So long ago as the year 1816, our Professor of Botany, in his lecture on the order Asclepiadæ, described a species of Asclepias that was cultivated in Syria. From the bark of the plant, which was treated in a similar manner to that of flax or hemp, was manufactured a beautiful article of linen with a silky lustre. And we have a native species of Asclepias, that grows abundantly in our open prairies, known by the name of Indian Hemp, the bark of which is capable of forming a fine, strong and lustrous cord. From these circumstances I am convinced that it is the bark of the Silk Plant, that constitutes its value; and that if the gentleman who first submitted the seeds, had also described the culture and uses of the plant, much vain speculation would have been saved.

N. D. S. of Arkansas.



SUB-SOIL WHEEL PLOW.

Mr. E. Whitman, Jr. has for sale, the Prouty & Sons' Sub-soil Plow, of which the above is a representation—It will be seen that it has a wheel attached, upon the same principle of their Centre Plow—the value of the sub-soil plow is now well established to require any commendation at this time; the great demand for them in the State, clearly evinces the estimation in which they are held, and consequently the supply is being proportionately extended. The largest sizes of the plows, with rod and wheel, Mr. Whitman sells for \$13, the second size with rod alone, \$10, the common plain plow, at \$8.

## HORTICULTURAL.

Having said as much as the occasion requires upon the business of the Farm, if you have no objection, we will pass into that spot, which, as the wife presides there, should be cherished in the best affections of the husband's heart. We need not tell you that we mean

### THE GARDEN.

**Sowing Early Seeds.**—Forthwith prepare a series of beds on the border of your Garden which is best situated to receive the genial influence of the sun. Manure them well, dig them deeply and rake them until every clod is perfectly pulverized; when the border is in order, lay it off into beds of the proper size to grow the plants of the different kinds of vegetables intended to be grown, and then sow your seeds, as *Early and late Cabbages, Cauliflowers, Lettuce, Tomatoes, Egg Plants, &c.* After sowing the various kinds of seed, rake them in lightly and finish your work by pressing down the earth with the back of the spade, as it is important that it should come in immediate contact with the seed, that being necessary to produce germination. If you apprehend injury from frost, the best way to prevent it, is to spread some long straw over the beds.

**Sowing Early Peas.**—This vegetable cannot be got in too early, therefore, as soon as the frost is out of the ground, select a bed of mellow dry loam, manure it moderately with well rotted manure, then dig it in well and pulverize it thoroughly with the rake. To put your garden grounds in the best possible order, it is necessary that the spade-man take but small slices at a time, that he sink his spade up to the top and rake every three feet, so that he may not press the earth down by treading on it after he has dug it, in the act of raking it with his rake. Many dig the bed all over before they commence raking, but this practice is altogether wrong, is as slovenly as it is injurious, and should never be permitted. The bed being prepared, have it laid off in drills three and a half feet apart, and two inches deep, for the early varieties, (the large marrow-fats should be planted in drills 5 feet asunder). Your drills should be made broad, so as to enable you to drill in the seed thick; cover about two inches deep, and your work for the present will have been finished. As it is desirable for every family to have a continuous supply of peas, it would be well to plant marrow-fats a few days after the early varieties, and at the expiration of two weeks, to plant a second crop of the same kind. By adopting this plan, your family may be ensured in a mess of peas throughout the season, a delicacy which no gentleman's table should be without. Let no one fear that it is too early to get in his peas, as there is no danger from frost,—in this respect we speak advisedly, having grown them amidst snow.

**Cabbage Plants.**—If you were provident enough to have provided yourself with a bed of early plants, you may set them out as soon as you can safely prepare

a bed for their reception. But recollect that the cabbage is a greedy feeder, and if you desire them to grow luxuriantly, you must manure your bed highly; the stronger the manure the better, the faster will your plants grow and the earlier arrive at maturity.

**Cauliflower plants.**—As soon as the weather gets settled, set out your cauliflower plants—in the preparation of your bed, you must pursue the same plan as with cabbages, manure with a liberal hand, pulverize thoroughly and keep each clean of weeds.

**Beans.**—These generally are tender and subject to be injured with frost; there are some varieties, however, which are not so tender, and which may be planted at any time after the middle of this month, as the *Windsor*, the *Mazagan* and the *Lisbon*. The soil in which beans most delight to grow is that in which *clay* most predominates. To grow them luxuriantly it is necessary that the soil be well manured and thoroughly pulverized. Make the drills 3 feet apart and drop a bean at every 3 inches, then cover and press the earth around the seed with the back of the spade, and the job of planting will have been completed. When they come up keep the weeds down, and the earth open, and in a few weeks you will be enabled to commence gathering them for the table.

**Radishes.**—Select a warm, sandy border with a southern exposure, manure, dig and pulverize the soil, then sow your Radish seed. To ensure a continuous supply it will be necessary to repeat your sowings every week or ten days.

**Spinach.**—This excellent vegetable cannot be sown too early this month. To ensure an early supply, it is necessary to manure the bed highly.

**Herbs, whether pot or medicinal, cannot be sown, or transplanted too early this month.** And while we are dwelling upon this branch of our subject, we would be permitted to remark, that no country gentleman should consider the appointments of his garden complete unless he shall have growing in it, *Sage*, *Thyme*, *Hyssop*, *Parsley*, *Rue*, *Balm*, *Mint*, *Winter Savory*, *Rosemary*, *Sweet Marjoram*, *Summer Marjoram*, *Lavender*, *Bergamot*, *Catnip*, *Fennel*, *Chalots*, *Chives*, *Leeks*, *Hoarhound*, *Coriander*, *Celandine* & *Chamomile*.

**Carrots, Parsnips and Beets.**—To secure an early supply of these roots, you must sow and plant the seeds as soon as you can get a bed ready. Manure either with well rotted manure, or a compost in which there are no long manure. They each thrive best in a *loamy* soil. The ground should be carefully and deeply dug and thoroughly pulverized by repeated rakings. Make your drills 2 inches deep and 2 feet apart, drop the seed about 6 inches apart, cover and press the earth around them. Before sowing the carrot seed you should rub them well between your hands and mix them in dry sand to make them separate easily.

**Early Turnips.**—If you desire early turnips, as soon as the ground is dry enough, select a deep loam, make a compost of well rotted manure, 4 parts, good rich mould 3 parts and 1 part ashes, mix it thoroughly together, then divide it into equal parts, spread one-half on your bed, dig it in deeply, pulverize the ground as the digger proceeds by thorough raking,—after this spread the remaining half on the newly raked bed, rake that in and then sow your seed, taking care to rake them in very lightly, and to finish by pressing down the ground with a board. The seed before being sown should be soaked in fish-oil for 12 hours, drained and dried in plaster or ashes. Your seed being in, sow over your bed a mixture of equal parts of lime and ashes.

**Small Salading** of all kinds must be sown as early as possible, and in order to ensure a constant supply, repeat your sowing at intervals of a week apart.

**Celery.**—Prepare a bed on a warm border, by heavily manuring it, deep spading and nice raking, then sow celery seed. Seed now sown will produce plants fit to be set out in May, when we will tell you how to manage them. If you have never grown celery before, do so this season, it is a delicacy at once fashionable and healthful, and every gentleman's garden should have a bed of it.

**Broccoli.**—Seed of this vegetable should now be sown to come to the table in October.

**Curled Kale.**—Towards the latter part of this month you must sow Kale seed for fall use.

**Forking and Dressing Asparagus Beds.**—Make a compost of 7 parts thoroughly rotted manure, free from long manure, and 1 part ashes, keep it in pile for a week, turning it over every second day, then spread it over your asparagus bed, when it must be forked in with a 3 tined fork, the tines to be about six inches long,—that done, rake the bed smooth, and sow a slight dressing of salt over it.

**Planting Asparagus.**—New beds of asparagus may now be planted out. The ground should be a deep dry mould, which must be trenched two spades deep. Before being dug, it must be covered 2 inches deep with strong well rotted manure, the dung to be buried in the trenches at least 15 inches below the surface. The trenching being done, lay on manure 2 inches deep, dig that in 10 inches deep, taking care to mix the manure well with the earth, and rake finely.

The ground being thus prepared, divide it into beds 4 feet and a half wide, with alleys 2 feet between each bed. At each corner of every bed, drive a stake firmly in, to serve as a mark for the alleys.

Plant 4 rows of asparagus plants in each bed, 10 inches to be allowed between each plant—the outside rows to be 8 inches from the edge.

Strain a line along the bed 8 inches from the edge, then make a drill 6 inches deep, in which place the plants upright 10 inches asunder, cover the crown of the plant two inches below the surface. In planting spread out the roots.

When the plants come up they must be kept clean of weeds.

**Onions.**—The seed of onions may now be sown, and the *bulbs* planted out.

**Salsify.**—Towards the latter part of this month sow salsify seed.

**Artichokes.**—Select a piece of deep loam, manure well, dig deep, and pulverize thoroughly, then plant out your slips of artichokes. When the plants appear, keep them clean and the earth loose.

**Peppers.**—Sow the different kinds of pepper seeds, so as to have plants to set out in May.

**Horse Radish.**—Set out a border of this healthful root.

**Rhubarb or Pie Plant.**—Take care to obtain a few plants of this vegetable and set them out. A dozen or two will be sufficient to furnish your family with pies all the season, equal in flavor, and more healthful, than the gooseberry.

**Early Potatoes.**—Any time after the middle of this month, you may plant early potatoes. Treat them as we have advised under our head of farm work.

**Fig Trees** should be pruned this month, and we will add, that it is the best time to plant them out.

Fruit trees of all kinds may be either pruned or planted out during this month.

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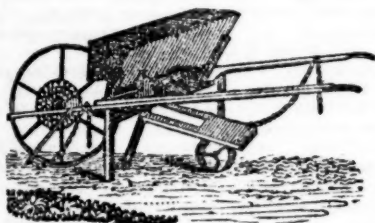
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**Gooseberries, Currants, Raspberries.**—This is the time for pruning and planting out these delicious fruits.

**Strawberry Beds.**—Strawberry beds should be cleaned of all weeds, and the plants from decayed leaves and old runners. This done, loosen the earth between the rows, and draw fresh earth from the alleys around the plants. Then lay long straw over the alleys, confining the ends with wooden pegs, so as to prevent the wind from blowing it away. If you apprehend that the soil is thin, you may make dung tea and apply it to the plants in the rows, by means of a watering pot.

**Planting out Strawberries.**—New beds of strawberries may be formed this month.

In concluding our month's memoranda, we would crave permission to wish our patrons, health, happiness and prosperity, and to conjure them, if they desire success to attend their operations, to let their eyes play the part of vigilant sentinels, as vigilance on the part of the master, begets a kindred watchfulness on the part of his laborers, whereas neglect in the head never fails to engender a disposition on their part to kill time.



PRATT'S SEED SOWER.

The above is a representation of a Seed Sower, introduced here by Mr. E. Whitman, 55 Light-st. It is intended particularly for sowing garden seeds, and as the price (\$10) is reasonable, it is worthy the attention of gardeners and others.

From the Southern Cultivator.

#### FRUIT AND FRUIT TREES.

December is the best time, in the Southern States, for transplanting fruit trees; and as we believe more attention than heretofore is about to be given to this business, we have thought that directions for planting, together with lists of good sorts, might be acceptable to the readers of the Cultivator. We condense what follows, to bring it within the compass of our paper, from the best authorities extant, chiefly from Downing, adapting it, as much as possible, to the use of the Southern States, by engraving on it the results of our own experience, which has been somewhat extensive during the last ten years.

In taking trees up, it should never be forgotten that the delicate and tender points of the roots, usually white and swollen, are the organs by which food is taken up from the soil for the nourishment of the tree. These should be preserved as much as possible, the chance of perfect success being lessened by every one of these points that is bruised or destroyed. Where it becomes necessary to cut large roots, the cut end should be made perfectly smooth with a sharp knife. Where the roots are gotten up without much injury, very little trimming of the top

is necessary. If the trees cannot be planted immediately, they will be greatly benefitted by dipping the roots in water and rolling the wet roots in the soil, so that a coat of it shall adhere to them, and then covering them with mats. They should never be allowed to become dry. If the trees are to be carried to any great distance, their roots should be carefully packed in wet moss.

In planting, the almost universal habit of the South, of looking upon a tree to be planted pretty much as on a fence post, and of treating it accordingly, must be corrected. The whole of the ground intended for an orchard should be rich, except for peach trees, and should be stirred, either by subsoiling or by trenching, to the depth of at least two feet. The holes for the trees should be dug out two feet at least, and four or five feet square, the subsoil removed, and its place supplied by surface soil, and with this filled up within as many inches of the top as will allow the tree to stand exactly as it stood in the nursery—the whole art consisting essentially in placing the roots as nearly as possible as they were before. Set the tree, and fill in among the roots with the soft surface soil, enriched, if necessary, with a mixture of charcoal dust, barn-yard—not stable yard—manure, and slacked lime. Pour a tubful of water about the tree, and this will settle the earth far better among the roots than the usual practice of shaking the tree and treading the soil around it. Set a stake by the tree and tie the tree to it with a hay band, and finish by covering the ground for four or five feet around the tree with coarse straw, litter from the barn-yard, or leaves from the forest.

The proper size of trees for transplanting is a very important matter. It is clearly settled by both theory and practice, that health, vigor and duration are all best promoted by selecting small trees from three to six or seven feet high. Such trees planted as are herein directed, make wood rapidly, and come very soon into a state of healthy and long continued productiveness.

There is trouble in all this! So there is. But what earthly enjoyment that is worth anything is to be had without trouble? Let any one plant an orchard according to these directions, and in a few years, if he takes any pleasure in seeing the work of his hands prosper, he will not regret the trouble his orchard has cost him—more especially if he remember in the meantime that it is an indispensable requisite in all young orchards to keep the ground mellow and clean by cultivation for the first few years, until the trees are firmly established in the soil.

We must not omit to remark that if any one intends to engage in fruit raising, either for consumption on his own table, or for the benefit of his stock, or for market, and wishes to have good fruit and thrifty trees as the result of his labor, he must first of all, make himself acquainted with the principles of Horticulture. The study of this branch of science is a delightful recreation, and the application of its principles to practice, is still more delightful. For the theory, we beg leave to recommend—

—Lindley's Outline of the Principles of Horticulture.

—Lindley's Theory of Horticulture, by Downing. For the practice—

—Kenrick's American Orchardist.

—Downing's Fruits and Fruit Trees of America.

#### APPLES.

In the Southern States apple trees should be planted in a deep, damp, loose loam, of calcareous or limestone character, with a northern exposure. The

rich alluvions of our rivers and creeks, not subject to be overflowed, would furnish the very best location for apple orchards. Steep, rocky, north hill-sides, of strong soil, would be perhaps the next best. The distance of the trees apart should be at least forty feet. And such sorts should be selected as are known to succeed in the neighborhood. For there is hardly any tree so local in its character as the apple. The Baldwin and Roxbury russet succeed well only in Massachusetts—Peck's Pleasant and Seek-no farther, are best in Connecticut—the Spitzburg and Newton pippins, in New York—the Bellflower and the Rambo, in Pennsylvania. English apples do not succeed well in the United States; and the American sorts planted in England lose their high flavor. In 1832, we brought from Ohio some very fine sorts—they are now growing in our grounds, but they have never answered our expectations, notwithstanding all our care of them. In the Northern and Middle States every neighborhood almost has its favorite varieties, which will not elsewhere come up to their high character at home. So too is it in the Southern States, with the exception of the horse and red June apples. They flourish everywhere, we believe, with proper treatment. Hence we do not furnish a list of apples, but leave every one, as ensuring the best success, to make a selection of such as have been tried, and are therefore known to do well in his immediate neighborhood. Yet we would advise every one to set about getting a good apple orchard—not indeed for the reason assigned by Dr. Johnson to one of his friends:—"I knew a clergyman," said he, "of small income, who brought up a family very respectably, which he chiefly fed on apple-dumplings." That happened in England—but, thanks to the men of '76, no such hardship need befall any one in this country—clergyman or layman. We place our advice on the ground of the exceeding great usefulness of the apple, on the table, in the kitchen, as an article of food for cows, horses and hogs, and as an article of commerce.

## PEARS.

Formerly, the pear was not much esteemed. In its wild state it is extremely austere: and even the pear which has been removed only one step from savagedom—the choke-pear—considered by many as the type of this sort of fruit, lays hold of the mouth and throat with a grip rather more severe than a green persimmon. And besides, the late bearing of most of the common sorts had given rise to the saying:

"He that plants pears,  
Plants for his heirs."

But within the last sixty years, through the exertions of Van Mons, Knight, and others, the pear has been so greatly improved, in all respects, as to be styled the queen of fruits in temperate latitudes. Van Mons devoted the whole of his life to the improvement of the pear; and, from 80,000 seedlings which he raised, he got a number of varieties of high excellence. Mr. Knight, by crossing, has added many others to the list of fine sorts; and some of the very best are the production of nature, having been found growing in hedges and meadows. In all, there are between 800 and 1,000 sorts that are esteemed good. But of all these, only about twenty are really first-rate.

The best soil for a pear is a strong loam, of moderate depth, on a dry subsoil.

If trees are wanted for an orchard, those grafted on pear stocks should be preferred—for the garden, those on quince stalks should be preferred, as they

make dwarfs, and come into bearing very soon. We have had trees on quince stalks to bear when only about three feet high—and large crops have grown on those that were only about ten feet. In the orchard, plant thirty feet apart—in the garden plant dwarfs, if Quenouille training is intended, six feet; otherwise, ten feet apart.

In gathering pears, it should be always remembered that most varieties are much finer in flavor, if picked from the tree and ripened in the house. There are many varieties, Mr. Downing says, that are only second or third rate, when ripened on the tree, but have the highest and richest flavor if gathered at the proper time and allowed to become mellow in the house. Winter pears, however, require a somewhat different treatment. They should be allowed to hang on the tree till the nights become frosty, and when gathered they should be wrapped separately in paper, packed in barrels, and put away in a cool room, until within about two weeks of the time when they usually become mellow, then be brought in a warm room and be there allowed to mature perfectly.

## CLASS I.—Summer Pears.

Bloodgood,  
\*Bartlett, or William's  
Bon Chretien,  
\*Dearborn's Seedling,  
Green Chisel,

\*Jargonelle,  
Julienne,  
\*Madeleine,  
\*Rousselet de Rheims,  
\*Summer Franc Real.

## CLASS II.—Autumn Pears.

Andrews,  
Althorpe Crassanne,  
Bell et Bonne,  
Beurre de Capiaumont,  
\*Beurre Brown,  
\*Beurre Bosc,  
\*Beurre Diel,  
Bergamot, Gansel's,  
Cushing,  
\*Dix,  
\*Duchesse d'Angouleme,  
\*Doyenne, white or St.  
Michael's,  
Flemish Beauty,

\*Frederic de Wurtemberg,  
\*Golden Beurre of Bilboa,  
Heathcot,  
Hacon's Incomparable,  
\*Louise Bonne de Jersey,  
\*Marie Louise,  
Napoleon,  
\*St. Ghislain,  
Seckel,  
Stevens' Genessee,  
\*Surpasse Virgaleau,  
Van Mons Leon de  
Clere,  
\*Washington.

## CLASS III.—Winter Pears.

Beurre d'Arenberg,  
Beurre Ranz,  
\*Black Worcester,  
Bon Chretien Spanish,  
Columbia,  
\*Chaumontel,  
\*Glout Moreceau,

\*Jaminette, or Josephine,  
Louise Bonne,  
\*Passe Colmar,  
Vicar of Wakefield, or  
Clion,  
\*Winter Nelis.

Those pears in the preceding list marked thus (\*) have borne fruit in our grounds, and they fully sustain here the character given to them by Manning, Kenrick, Downing, and others. And in this list are included those that are esteemed to be the very best in Europe and the United States. They can all be purchased in Northern nurseries, at from 25 to 100 cents per tree, and can be safely sent to any part of the country.

## PEACHES.

As we remarked on a former occasion, this fruit has been so much neglected in the Southern States, as to have become comparatively worthless. Even the brandy that is made of it, compared with what was made thirty years ago, is often little better than blue ruin or cocklebur whiskey. It is, in reality, slowly falling back into its original poisonous character. No one who has tasted the fine sorts grown in New Jersey and Delaware, can ever afterwards relish the miserable trash that is too often allowed to grow in



Southern orchards. Even as food for hogs, it would be for every one's interest to get sorts and cultivate them carefully.

Every body knows the kind of soil the peach tree grows best in—and every one knows that no tree is more easily propagated. From the stone in one year, trees may be raised large enough for budding. And every one may learn, in five minutes, how to bud a peach tree, either from the books or from one who understands the process. Get good kinds and go to work, and in three years orchards may be had to any extent, that will be worth something. We add a list of kinds, about the high qualities of which there is no dispute. To praise them would be to "gild refined gold." But unless they are properly taken care of, it will be all labor thrown away. The ground should be ploughed and kept clean, and the trees carefully pruned every year according to the system of shortening in, that is, cutting off, in January, half the last year's growth over the whole outside of the tree, and also upon the inner branches, cutting always close to a leaf-bud: the object of this pruning being to diminish the crop one-half, make every peach double the usual size, and of superior flavor, and furnish a large supply of strong bearing wood for next year.

Commercial gardeners usually sell peach trees at about 25 cents each. Those marked (\*) we have tried, and know to be good.

#### CLASS I.—*Freestone Peaches with pale flesh*

- |                              |                          |
|------------------------------|--------------------------|
| *Bellegarde or red Magdalen, | Late Admirable,          |
| Brevoort's Seedling Melter,  | *Morris' Red Rareripe,   |
| *Belle de Vitry,             | *Morris' White do.,      |
| Early York,                  | *Morrisania Pound,       |
| Early Newington,             | Malta,                   |
| *Early Admirable,            | *Noblesse,               |
| George the Fourth,           | Oldmixon,                |
| *Grosse Mignonne,            | Royal George,            |
|                              | *Red Rareripe,           |
|                              | *Snow, or white blossom. |

#### CLASS II.—*Freestone Peaches with deep yellow flesh.*

- |                                 |                            |
|---------------------------------|----------------------------|
| Abricotte, or yellow Admirable, | Crawford's late Malocoton, |
| *Crawford's early Malocoton,    | *Red Cheek Malocoton,      |
| *Columbia, or Pace,             | Yellow Alberge,            |
|                                 | Yellow Rareripe.           |

#### CLASS III.—*Pavies, or Clingstone Peaches.*

- |   |                      |
|---|----------------------|
| *Blood Clingstone,                          | *Lemon Clingstone,   |
| *Catharine,                                 | Late yellow Alberge, |
| *Heath, or "white English" of our orchards, | *Old Newington,      |
| *Incomparable Admirable,                    | Pavie de Pomponne,   |
|   | Tippecanoe.          |

#### PLUMS.

The plum is one of the hardiest of fruit trees, and requires not near so much care in the cultivation as the apple, pear and peach. It succeeds best when planted in a heavy loam, or in a soil containing a large proportion of clay. Where the soil is sandy it should be thoroughly mixed with clay, and enriched with swamp muck. Mr. Downing says he has found common salt to be one of the best fertilizers for the plum. The most successful plum grower in his neighborhood, he says, applies, with the best results, half a peck of coarse salt to the surface of the ground under each bearing tree, annually, about the first of April.

Grafted on seedling stocks of the common Chickasaw plum of our fields, under the surface of the ground, it makes a beautiful dwarf tree for the garden, comes very soon into bearing, and produces very large crops of very fine fruit.

The most effectual protection against the attacks of the curculio is to catch and kill the insect. About a week after the trees are out of blossom, commence the war. Every evening for about a month, spread a white cloth under the tree, then jar the tree by striking the body of it with the hand. The curculio will double himself up and fall on the cloth as if dead, appearing very much like a dead bud of the tree. On close examination he is readily distinguished from the buds that fall with him, and may be caught and crushed. Of all the methods recommended that we have tried, and we have tried the most of them, this is, by far, the most effectual.

In the following list, those marked thus (\*) have fruited in our garden, and we know them to be good:

#### CLASS I.—*Green, White or Yellow Plums.*

- |                     |                        |
|---------------------|------------------------|
| Buel's Favorite,    | Jefferson,             |
| *Bingham,           | *Large Green Drying,   |
| *Coe's Golden Drop, | *Washington, Bolmer's, |
| Dana's Yellow Gage, | *White Magnum Bonum,   |
| *Green Gage,        | Prince's Yellow Gage,  |
| *Huling's Superb,   | *Semiana.              |
| *Imperial Gage,     |                        |

#### CLASS II.—*Red, Blue or Purple Plums.*

- |                            |                        |
|----------------------------|------------------------|
| *Brevoort's Purple Bolmer, | *Horse Plum,           |
| Blue Imperatrice,          | *Italian Damask,       |
| Cooper's Large Red,        | *Orleans, Smith's,     |
| Columbian Gage,            | *Purple Gage, or Reine |
| *Damson, Common,           | Claude Violette,       |
| *Duane's Purple,           | *Quetsche, or German   |
| Diamond,                   | Prune,                 |
| Elfrey,                    | Red Magnum Bonum,      |
| Frost Gage,                | Royale Hative,         |
|                            | *Sharp's Emperor.      |

The usual price of plum trees in the commercial gardens is from 50 to 100 cents per tree.

## THE ARBORETUM.

### I MAGNOLIA TRIPE'TALIA L.

The three-petaled Magnolia, or Umbrella tree.

Fig. 1. The three-petaled Magnolia.

Synonymes. *M. umbrellata* Lamb. *M. frondosa* Salisb.

Engravings. Michaux Arb., vol. 3, pl. 5. Arboretum Brit., vol. 5, pl. 6, and our fig. 1.

Geography.—The *Magnolia tripe'tala*, is a native of the United States, growing, according to Michaux, from the northern part of New York State to Georgia, but found only, over this great extent of country, in somewhat shady places and in strong, deep and fertile soils. In some parts of North Carolina and Georgia, it is only found on deep soils near the banks of rivers, and in company with the *M. grandiflora*.

Description.—This species, though one of the most generally cultivated, is yet rare in plantations of trees. It is perfectly hardy in the climate of New England, and is of moderately rapid growth, making shoots three or four feet long in a season; when quite young, the ends of the shoots are sometimes slightly injured by early frosts when the wood is not ripe, but the roots soon throw up strong shoots, which take the place of those destroyed. The tree attains the height of about thirty feet, seldom exceeding thirty-six, with a trunk five or six inches in diameter. The leaves are large and long, often measuring eighteen inches in length and eight broad, and they are produced in large tufts at the ends of the branches, as shown in the engraving, which have

given it the appellation of the Umbrella tree, or in French, the Parasol Magnolia. The flowers are large, seven or eight inches in diameter, with from nine to twelve petals, appearing in May and June, on the extremities of last year's shoots, and possessing a sweet but heavy perfume. They are followed by a conical fruit, which changes to a deep rosy tint, rendering the tree very showy until they drop in the autumn.



The *Magnolia tripetala* is a very beautiful tree, and no ornamental plantation or pleasure ground should be without it. A tree, in good soil with proper treatment, will attain the height of ten to fifteen feet in ten years, when it will assume the shape and appearance of our engraving, which is of a tree ten years planted, and twelve feet high, (drawn to a scale of one quarter of an inch to a foot.)

**Soil, Situation, Propagation and Culture.**—The best soil for this species is a deep rich, sandy loam, on a subsoil not too retentive of moisture, when it will fully ripen its wood. The situation should be partially shaded and sheltered, and it should be set at such a distance from other trees or shrubs, that it may have room to expand its branches and display its flowers; the border of a lawn would be a most appropriate place. The trees are sometimes raised from layers, but they are generally propagated by seeds, and they should be transplanted where they are to remain, before they attain a large size; three to six feet high is the best size for removing with safety.

**History and Statistics.**—This umbrella tree was first introduced into England about 1752, and it has now become one of the most common kinds; and in the neighborhood of London are numerous plants thirty feet high. In France, and on the continent, it is also common; but in the north of Germany and Denmark, according to the *Arboretum Britannicum*, it is a greenhouse plant. The finest cultivated plants in our gardens are in the Bartram Botanic Garden, near Philadelphia. The price of trees is from 50 cents to \$1 each.—*Mag. of Horticulture.*

## FLORICULTURE.

WORK FOR MARCH.

PREPARED FOR THE *American Farmer* BY SAM'L. FEAST, Florida.

*Camelias* will now be pushing their wood-buds.—Give plenty of water, and syringe over the foliage frequently.—*Azaleas* now blooming, should receive an increased supply of water.

*Pelargoniums*, or *Geraniums*, showing flower buds, should have plenty of air and water. Repot such as were not attended to last month, and keep clean by fumigation, &c.

*Verbenas*, in small pots, should be repotted, and their branches tied neatly up to stakes.

*Achimenes*.—Repot, as directed last month, if not already done.—*Anaryllis*.—Repot such as show flower buds, in light rich soil.

*Cactuses* will require additional supplies of water.

*Dahlias*, if wanted for early bloom, should be separated and potted, and placed on a hot-bed.

*Tender Annuals*.—Commence the sowing of, in pots, and place them in a frame, on a hot-bed.

*Hardy Annuals* for early bloom—sow as soon, after the frost is over, as possible.

*Plants in frames* will need plenty of air every fine day.

*Roses* in pots, now blooming, should receive moderate supplies of water, and plenty of air. Attend to fumigation when necessary.—The *Chinese varieties* in the open ground, will require pruning as soon as the frost is fairly over.

*Hyacinths and Tulip beds* will need attention—uncover about the latter part of the month.

*Herbaceous Plants* may be uncovered the last of the month.

## METEOROLOGICAL TABLE, FROM 29TH JANUARY, TO THE 26TH FEBRUARY.

Kept at Schellman Hall, near Sykesville, Carroll co. Md. Taken at 6 o'clock, a. m., 2 o'clock, noon, and at 6 o'clock, p. m.

	Wind.	Temperature.	Remarks.
29	W S S	30 38 35	Cloudy Rain
30	W S W	34 56 54	Cloudy Rain 3-10 inch
31	W SW N	53 63 45	Cloudy, Clear
1	NE NE NE	25 26 25	Snow, Cloudy,
2	NE W SW	26 34 34	Cloudy
3	W S W	32 43 38	Cloudy Clear
4	W W W	34 45 38	Clear
5	W S W S W	30 53 48	Clear a great variety of birds
6	S S S	29 47 40	Cloudy
7	NE W NW	30 38 34	Snow, 5 inches, Cloudy
8	NW W W	29 40 25	Clear
9	W W W	11 37 25	Clear
10	W W S	9 38 33	Clear
11	S SW W	29 46 38	Cloudy, a shower in the evening
12	N NW W	26 40 30	Clear
13	W W W	25 43 33	Clear
14	NE NE EE	28 28 29	Cloudy, snow and rain 4 inches.
15	NW W W	28 34 30	Cloudy.
16	W W W	27 39 34	Cloudy, Clear
17	SW W N	20 46 36	Clear
18	NW W W	25 40 32	Snow 1-2 inch, Clear
19	N NE NE	17 28 33	Clear, snow, hail and rain 2 in.
20	S W W	32 39 34	Clear
21	W W SW	24 38 32	Clear
22	W W S	27 34 29	1-2 Snow Clear
23	W W W	18 43 32	Clear
24	W W W	21 42 35	Clear
25	NE W W	23 34 27	Snow 1 inch
26	W W	9 35	Clear

**GUANO.**—The subscribers have received from N. York, a large supply of this celebrated manure, imported into that port in the bark *Caroline Amelia* from China, and is equal to any ever brought to this country. It is in the original bags of about 150 pounds each, and will be sold by the bag or larger quantity at \$40 per ton of 10 tons and over, —\$42½ per ton of 5 tons and over—\$45 per ton for less than 5 tons, of 2340 lbs.

F. & W. RODEWALD, Buchanan's whf. Orders for smaller quantities than 5 tons supplied by SAMUEL SANDS, at the office of the *American Farmer*, 122 Baltimore street, near North street, where the analysis and report of Prof. DUCATEL (an extract from which was published in the last Farmer) can be examined. Mh 1

**Baltimore Market, February 28.**

Flour—No change since the arrival of the steamer; Howard st. \$4.62a75; receipt price \$4.63, City Mills \$4.87a5, stock light; Susquehanna, last sales \$4.75, little in market. Rye Flour \$3.75; Corn meal, Pa. \$3.25a3.31; Md. \$3.37 per bbl. or \$1.37a\$1.44 per 100 lbs; Buckwheat, sales at \$2 to \$2.37, as in quality.—Wheat, receipts moderate; sales of good to prime reds at 98a103c; ord. to good 90a98; a lot of Va. white, not prime, sold at 100c.; white wheat for family use is worth 110a115c.—Corn, receipts light, and prices have improved; yellow 64c., and white 58a60; a sale of 2400 bush, mixed made at 60c.—Oats, steady at 36a38.—Flaxseed, sales at \$1.20 to \$1.25.—Cloverseed, considerable sales at retail, at \$5.75a6 for prime; market firm, as there is but little more expected.—wholesale prices \$5.50, cash.—Timothy seed, a good supply, sales at \$2.50 to \$3 for fair to prime.—Western prime Pork \$10.50a10.56;—mess do \$12.50;—Beef, mess, \$10.25;—Cattle, beef, supply small, and prices have improved, average of sales being about \$3; 250 head offered at scales on Monday, of which 195 were taken by city butchers, at prices ranging from \$2.37 to \$3.50 per 100 lbs. on the hoof, equal to \$4.75a6.75 nett; 32 head left unsold, and 23 driven to Washington, sales at same prices have since taken place.—Bacon, active demand, at 6 to 6½c for assorted, 5½ to 5½c for shoulders, 7½ to 8c for hams, sides 6a6½c.—Lard, Ta7½c.—Coffee, Rio, 7 1-8a8½c.—Cotton, N. O. Mobile, and Louisiana, 8½a9½c.—Frathees, 20 to 30c. according to quality.—Wood, hickory \$5.25; oak \$4.50a4.75; pine \$2.75 to \$3.—Stone Coal, \$6 to \$7.—Hay \$14 per ton.—Spirits Turpentine \$5 to 67c;—Tar, \$2 to \$2.12 per bbl.—Rosin, \$1 to \$1.25.—Linsed oil, 64c per gall.—Plaster, \$3.75 per ton; ground \$1.12 per bbl.—Peas, N. C. black eyed 62c. per bush.—Potatoes, supply limited, Maine mercers \$1.05 to \$1.12.—Rice, \$4.12a4.75 per 100 lbs.—Sugar, N. O. has an upward tendency, prices varying from \$6a6.25, and very choice, \$6.20; Porto Rico \$6.65a6.85.—Wool, com. 27a28c. cash, 37c. at 6 mo.—Whiskey, 24c in bbls. 23c in hhd. Md. Coupons 75a76. Tobacco, dull, receipts new crop very limited; ground leaf \$5a8, as in qual.; com. lots very dull at 3a4.50; inf. & com. 2a3; mid. to good 3a3.50; good 6a7; fine 8a11; inspections light.

"Spade labour, the perfection of good husbandry."

**PULVERIZATION.****DECOMPOSITION.**

THE "PREMIUM PLOUGH"—In PROUTY & MEARS' No. 51-2, "confessedly the best PLOUGH known in this country for beauty of work and pulverizing the soil," we have combined the most perfect swing as well as wheel Plough, connected also with the principles of self-sharpening and centre-draught, which with the facility of turning it into a Tandem 2, 4, or 3 Horses abreast Plough in a minute of time, renders it the **PLUS ULTRA** of perfection. During the past season it received the first premium for the **BEST PLOUGH**, at Philadelphia; a first, second and third premium at New Castle county, Del.; the Imperial Medals of Russia, of massive gold, value \$300; and at Prince George's society, Md. the highest testimony of approbation, in not permitting it to compete, having already received the first premium as the **BEST PLOUGH** for general purposes." Their one-horse Plough No. 21-2, is strongly recommended for light soils and horticultural purposes, being built after the same model, self-sharpening, and carrying a sod furrow 10 in wide with great ease and precision.

For sale at No. 55 LIGHT ST. Baltimore, Mr. EZRA WHITMAN being appointed sole Agent for sales in Baltimore and vicinity.

Fe 1

**NORTH DEVON CATTLE**—The subscriber offers for sale a few BULLS, HEIFERS and CALVES, of pure NORTH DEVON blood, from 6 to 18 months old. They have been bred with great care from the best stock in the country, are handsome animals, of good size, and in fine condition.

Prices from \$30 to \$50. Address or apply to

JOHN P. E. STANLEY,  
46 S. Calvert st. Baltimore, Md.

Jy.—11

**GARDEN AND FLOWER SEEDS.**

THE subscriber has for sale at his SEED & BOOK STORE, 123 Baltimore street, sign of the **GOLDEN PLOUGH**, a general assortment of GARDEN & FLOWER SEEDS—and will furnish to order FIELD SEEDS, FRUIT & ORNAMENTAL TREES and SHRUBBERY of every description—also any of the AGRICULTURAL MACHINERY and IMPLEMENTS manufactured in this city, as well as the IMPROVED BREEDS OF CATTLE, SHEEP, HOGS, FOWLS, &c.

**BOOKS**—In addition to the works advertised last month, he has just received a further supply, and his assortment now comprises nearly all the standard works in the various departments of Agriculture, Horticulture, &c. &c.

Mh 1

**SAMUEL SANDS.**

**WHITMAN'S AGRICULTURAL WAREHOUSE, No. 55 LIGHT ST., BALTIMORE**—Having recently been much enlarged, is now one of the most extensive establishments of the kind in the United States. His stock consists of the latest and most valuable inventions, such as his new improved wrought iron railway Horse-power—Price of the one horse, \$75; two horse, \$100. More than 1000 of these Powers have been made and sold by the inventor, and all who have given them a fair trial admit they are double in power, more durable and convenient; less liable to get out of repair, and easier for the horses than any other kind of Power.

His new Thrasher, which thrashes and cleans all kinds of grain at one operation, is admitted by some of the best farmers of Maryland to be a saving of more than 200 per cent. over any other machine in use in this State.—Price \$100; common Thrashers \$20 to \$35. His new Thrasher, with all of his improvements in it, which make them perfectly safe and convenient, and a cylinder which will last forever.—40, 45, and \$50. Grant's N. Y. Premium Fan Mill, which took the Premium at the New York State Fair in Sept. last, and also in Philadelphia in Oct. last.—Price 25; 27, and \$30; various other patterns of Fan Mills from \$18 to 35. Hovey Premium Corn Stalk and Straw Cutter from 15 to \$30, and various other kinds. Corn Shellers 11, 12, 16 and \$30. Royer's Fodder Cutter and Grinder.—Price \$30. The largest stock of Ploughs and Plough Castings on hand ever offered for sale in this Market, consisting of Boston, New York and Maryland manufacture, also Cultivators, Seed Sowers, Smut Machines, Mills, Spades, Shovels, Hoes, &c., all of which are offered on the most liberal Terms. (For Farmers and others will please call and examine for themselves. EZRA WHITMAN, Jr.

P. S.—A stock of fresh Garden Seeds will be received and for sale the first of March—Farmers and Gardeners who want Fresh Seed will do well to call.

mar 1 E. W.

**NEW YORK AGRICULTURAL WAREHOUSE**—Having taken the commodious store No. 167 Water st. the subscriber is now opening the largest and most complete assortment of Agricultural Implements of all kinds ever offered in this market. Most of these are of new and highly improved patterns, warranted to be made of the best material, put together in the strongest manner, of a very superior finish, and offered at the lowest cash prices.

**SEEDS FOR THE FARMER**—such as improved winter and spring Wheats, Rye, Barley, Oats, Corn, Peas, Beans, Ruts, Baga, Turnip, Cabbage, Beet, Carrot, Parsnip, Clover and Grass Seeds; improved varieties of Potatoes, &c. &c.

**FERTILIZERS**—Peruvian and African Guano, Poudrette, Bone dust, Lime, Plaster of Paris, &c.

**FRUIT & ORNAMENTAL TREES & SHRUBS**—Orders taken for these, and executed from a choice of the best nurseries, gardens and conservatories in the United States.

**WIRE CLOTHS & SIEVES**—Different kinds and sizes of these to be had at all times.

**NEW & IMPROVED IMPLEMENTS & SEEDS**—The subscriber requests samples sent to him of any new or improved implements, seeds, &c. &c. which, if found valuable, extra pains will be taken to bring them before the public.

A. B. ALLEN, 167 Water st. New York,

Editor of the American Agriculturist, a monthly publication of 32 pages 8vo. with numerous illustrations. Price \$1 a year.

**AGRICULTURAL IMPLEMENTS** for sale at No. 7 Bowly's wharf, Baltimore, by M. GAWTHROP & SON.

We offer to Farmers and Planters our Premium Double Corn Sheller, which have proved themselves to be the very best now in use—we have on hand one of the best selections of PLOWS in the state, the castings of which are the composition metal, with chilled heels, points and edges; our plows embrace the Minor & Horton from 6 inch. to 12, so much used in the North; it is one of the lightest draught plows in use—we have the Wiley improved, and the old pattern of the N. York manufacture, which is known without comment. Also, the Prouty, Chenoweth, Self-sharpening, Davis, and all other kinds; Plow shears and Points for all kinds of Plows; Fans, Straw Cutters, Corn and Cob Crushers, and all other kinds of Implements used in farming—we also keep all kinds of Field Seeds—we do a general commission business in Grain, Seeds and Country Produce.

Fe 1



### MARYLAND SELF-SHARPENING PLOUGH.

THE above cut is a representation of the **MARYLAND SELF-SHARPENING PLOUGH**, which now ranks among the best plows in this country. As regards strength, durability and simplicity of the self-sharpening principle, they are probably superior to all others.

Price for the 8-in. size, a light 2 horse Plow,	\$9 00
“ “ Common 2 horse “	11 00
“ “ 3 horse do “	13 00
“ “ with regulating wheel, extra	1 50

ALSO FOR SALE—Winan's self-sharpening Plows, at \$5 to \$8 each—Evaus or Chenoweth do 4.50 to 6.50—Wiley do 4.50 to 10—Beach's self-sharpening do 4.50 to 6.50—Wood's do 9.50 to 7—Shelton & Moore's do 4.50 to 12—Davis' do 4.50 to 12—Bar-sher do 5.50 to 12—Hill-side do 8 to 12—Connecticut do 4.50 to 6—Subsoil do 8 to 14—Wheel Plows \$8—3 furrow seeding and corn Plow 6.50—Tobacco barring do 6.50—Double mould board do 8—Shovel do 4.50.

Harrow 6.50 to \$14—Cultivators 5 to 6.50

Cylindrical and common straw and fodder Cutters, 5 to \$75  
Fanning Mills 25 to \$45  
Corn Mills and Crushers, 30 to \$60  
Corn Shellers 12 to \$60  
Endless chain Horse Powers, 75 to \$100  
Lever Horse Powers, 100 to \$150  
Thrashing Machines 30 to 60—Driving bands 8 to \$10  
Vegetable Cutters \$50—Grain Cradles, Horse-hay Rakes  
Road Scrapers, Rollers, Ox Yokes, Post-hole Augurs  
Scythes, Hay and Straw Knives, Grubbing Hoes—and  
FIELD & GARDEN TOOLS GENERALLY  
Our assortment of GARDEN SEEDS is extensive, and seeds as fresh and perfect as can be obtained in this country.

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### FRUIT TREES,

Raised on the FRUIT PLANTATION of Lloyd N. Rogers, near Baltimore—comprising Apples, Pears, Peaches, Apricots, Plums, Cherries, &c. of the very choicest kinds, can now be furnished on application to the proprietor, or to Mr. SAMUEL SANDS, office of the American Farmer, where CATALOGUES may be obtained. mh 1

### PLOUGHS! PLOUGHS!!

The subscriber's manufacturing Ploughs of various patterns and of different sizes; also Wheat Fans, Cylindrical Straw Cutters, Corn and Tobacco Cultivators, CORN SHELLERS, &c. Also, THRESHING MACHINES and HORSE POWERS—these latter are used by the following gentlemen, to whom reference is made, as to their superior value, viz. Messrs. S. Beard, T. Beard, Dr. Watkins, T. J. Hodges, T. Welsh, W. Mackall, J. Iglehart, A. Sellman, W. Hopkins, J. Kent, G. R. Gaither, all of Anne Arundel county; and to Messrs. R. B. Chew, J. Y. Barber, W. Boswell, G. W. Hecms, and Z. Howes, of Calvert co. Md. (Those wishing to examine the above articles are invited to call at my establishment in *Gillicham alley*, entrance from Howard st. 4 doors from Pratt st. Baltimore. mh 1

CHAS. H. DRURY.

**R**ASPBERRIES, CURRANTS, GOOSEBERRIES, GRAPEVINES, HONEYSUCKLES, and other Flowering Shrubby, a general variety of Roses—also, Apricots and Plums—Asparagus Roots, &c. &c.—of the very choicest kinds, raised by the subscriber, who gives his personal attention to the rearing and packing of his trees and roots; and as he keeps none but the very finest sorts, he can confidently recommend them to those who may wish to secure a superior assortment, and to obtain such as may be relied on. (Orders left with Mr. SANDS, at the office of the *American Farmer*, or at the Nursery in Ross st. near the head of Eutaw st. will be promptly attended to. mh 1

JOSEPH HEUSLER.

**N**OTICE—The subscriber, residing near Williamsport, Washington Co. Md. is desirous of employing for the next year, a GARDENER—to a person well versed in the business, sober and industrious, liberal wages will be given. mh 1

JNO. R. DALL.

**B**OMMER'S METHOD FOR MAKING MANURE—The subscriber has been appointed by Mr. Bommer, his agent for the Southern States, and will dispose of the Books, with the right to use them, for any sized farm, at \$5 each. Address (post paid) mh 1 SAM'L SANDS, office of "A. Farmer."

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